

# AquaPro®

## Herbicide

# SPECIMEN



GROUP 9 HERBICIDE

For control of annual and perennial weeds and woody plants in noncrop sites including industrial sites, rights-of-way (including roadsides, electric utility and communication transmission lines, pipelines, railroads, airports), irrigation and drainage ditches, canals, reservoirs, natural areas (including wildlife management areas, wildlife openings, wildlife habitats and refuges, parks and recreational areas, campgrounds, trailheads and trails), rangeland, and in and around aquatic sites and wetlands; also for grass growth suppression and grazed areas on these sites.

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.

### Active Ingredient:

glyphosate<sup>1</sup> N-(phosphonomethyl)glycine, isopropylamine salt..... 53.8%

Other Ingredients..... 46.2%

TOTAL..... 100.0%

<sup>1</sup>Contains 5.4 lb per gallon glyphosate, isopropylamine salt (4 lb per gallon glyphosate acid).

## Keep Out of Reach of Children

# CAUTION

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

Refer to label booklet for *Directions for Use*.

**NOTICE:** Read the entire label. Use only according to label directions. **Before using this product, read Terms and Conditions of Use, Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies** at end of label booklet. If terms are unacceptable, return at once unopened.

EPA Reg. No. 62719-324-67690  
FPL20121025

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Manufactured for: SePRO Corporation 11550 North Meridian Street, Suite 600  
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## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

# CAUTION

**HARMFUL IF INHALED. AVOID BREATHING SPRAY MIST. REMOVE CONTAMINATED CLOTHING AND WASH BEFORE REUSE. WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING.**

### 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. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

## ENGINEERING CONTROLS

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.

### FIRST AID

<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
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Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-992-5994** for emergency medical treatment information.

## USER SAFETY RECOMMENDATIONS

### Users should:

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

## ENVIRONMENTAL HAZARDS

Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants. This oxygen loss can cause fish suffocation.

In case of leak or spill, soak up and remove to a landfill.

## PHYSICAL OR CHEMICAL HAZARDS

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

**Do not mix, store or apply this product or spray solutions of this product in galvanized steel or unlined steel (except stainless steel) containers or spray tanks.** This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas, which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

**This is an end-use product. SePRO Corporation does not intend and has not registered it for reformulation.**

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

## AGRICULTURAL USE REQUIREMENTS

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

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

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

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

## Non-Agricultural Use Requirements

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

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

## STORAGE AND DISPOSAL

Do not contaminate water, food, feed or seed 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 containers to mix well before using.

**Pesticide Disposal:** Wastes resulting from use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures.

(continued)

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

### **Nonrefillable containers 5 gallons or less:**

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank 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. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

### **Refillable containers larger than 5 gallons:**

**Container Handling:** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

### **Nonrefillable containers 5 gallons or larger:**

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 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: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

## **PRODUCT INFORMATION**

This product is a broad spectrum, systemic, postemergent herbicide with no soil residual activity. It is intended for control of annual and perennial weeds and woody plants and brush. It is formulated as a water soluble liquid.

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

**Stage of Weeds:** Annual weeds are easiest to control when they are small. Best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity. Refer to the annual,

perennial and woody brush and trees rate tables for specific weeds. Always use the higher rate within the rate range for heavy or dense weed growth or when weeds are growing in an undisturbed (noncultivated) area. When treating weeds with disease or insect damage, weeds heavily covered with dust, or weeds under poor growing conditions, reduced weed control may result.

**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 off this product from the foliage and a repeat application may be required for adequate control.

**Spray Coverage:** For best results, spray coverage should be uniform and complete.

**Mode of Action:** The active ingredient in this product inhibits an enzyme. This enzyme is found only in plants and microorganisms that are essential to forming 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 rootstocks of perennials will not be affected by the herbicide and will continue to grow.

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

**Maximum Application Rates:** The maximum application rates specified in this label are given in units of volume, either fluid ounces, pints or quarts, of this product per acre. The maximum allowed application rates apply to this product combined with the use of any and all other glyphosate- or sulfosate-containing herbicides, either applied separately or in a tank mix, on the basis of total pounds of glyphosate (acid equivalents) per acre. If more than one glyphosate- or sulfosate-containing product is applied to the same site within the same year, ensure that the total of pounds acid equivalent glyphosate does not exceed the maximum allowed.

Do not apply more than 8 quarts of this product (8 lb glyphosate acid) per acre per year for all use sites listed on this label.

**IMPORTANT:** When using this product, unless otherwise specified, mix with a surfactant, such as a nonionic surfactant containing 80% or greater active ingredient. For conifer release (pine release) use only surfactants that are approved for conifer release and specified on the surfactant label as safe for use in conifer release (pine release). Use of this product without surfactant will result in reduced herbicide performance. Ammonium sulfate, drift control additives, or dyes and colorants may be used. See Mixing Directions and the surfactant manufacturer's label for more information.

**Grazing Restrictions:** This product may be used to treat undesirable vegetation in utility rights-of-way that pass through pastures, rangeland, and forestry sites that are being grazed. For tank mix applications, comply with all restrictions appearing on the tank mix product label.

Except for lactating dairy animals there are no grazing restrictions following the labeled applications of this product.

For lactating dairy animals there are no grazing restrictions for the following labeled applications of this product:

- Where the spray can be directed onto undesirable woody brush and trees, including in handgun spray to wet or low volume directed spray treatments.
- For tree injection of frill applications and for cut stump treatments.

For broadcast applications, observe the following restrictions for lactating dairy animals:

- For application rates between 4.5 and 7.5 quarts per acre, no more than 15 percent of the available grazing area may be treated.
- For application rates less than 4.5 quarts per acre, no more than 25 percent of the available grazing area may be treated.

These restrictions do not apply to pastures, rangeland or forestry sites outside of utility rights-of-way.

## **HERBICIDE RESISTANCE MANAGEMENT**

Glyphosate, the active ingredient in this product, is a group 9 herbicide (inhibitor of EPSP synthase). Some naturally occurring weed biotypes that are tolerant (resistant) to glyphosate may exist due to genetic variability in a weed population. Where resistant biotypes exist, the repeated use of herbicides with the same mode of action can lead to the selection for resistant weeds. Certain agronomic practices reduce the likelihood that resistant weed populations will develop, and can be utilized to manage weed resistance once it occurs.

**To delay the selection for glyphosate resistant weeds, use the following practices:**

- Scout fields before and after application to detect weed escapes or shifts in weed species.
- Start with a clean field by applying a burndown herbicide or by tillage.
- Control weeds early when they are small.
- Add other herbicides, including a selective and/or a residual herbicide, and cultural practices, including tillage or crop rotation, where appropriate.
- Use the application rate for the most difficult to control weed in the field. Do not tank mix with other herbicides that reduce this product's efficacy through antagonism or with ones that encourage application rates of this product below those specified on this label.
- Control weed escapes and prevent weeds from setting seeds.
- In situations where resistant weeds are a problem, before moving from one site to another, clean equipment to minimize the spread of weed seeds or plant parts.
- Use new commercial seed that is as free of weed seed as possible.
- Report any incidence of repeated non-performance of this product against a particular weed species to the local retailer, county extension agent, or Dow AgroSciences representative.

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

- Tank mix this product or apply it sequentially with an appropriately labeled herbicide with a different mode of action to achieve control if a naturally occurring resistant biotype is present in the site.
- Cultural and mechanical control practices, including crop rotation or tillage, may also be used.
- To control weed escapes, including resistant biotypes, before they set seed, scout treated sites after applying this product.
- Thoroughly clean equipment before leaving any site known to contain resistant biotypes.

Because the presence of glyphosate resistance in weed populations is difficult to detect prior to use, Dow AgroSciences accepts no liability for any losses that may result from the failure of this product to control glyphosate-resistant weeds.

## **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. Use extreme care 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.

## **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 and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be

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

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

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

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory**.

## **Aerial Drift Reduction Advisory**

**This section is advisory in nature and does not supersede the mandatory label requirements.**

**Importance of Droplet Size:** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent adverse effects from 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. Use the lower spray pressures for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is 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 largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**Swath Adjustment:** When applications are made with a 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 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Do not apply this product when wind speed is below 2 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns. Every applicator should 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:** Do not apply this product during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing 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 connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

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

### **MIXING DIRECTIONS**

Use only clean, stainless steel, fiberglass, plastic or plastic-lined steel containers to mix, store and apply spray solutions of this product. Do not mix, store or apply this product or spray solutions of this product in galvanized steel or unlined steel, except stainless steel, containers or spray tanks.

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

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

#### **AquaPro – Alone**

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

1. Fill the mixing or spray tank with the required amount of clean water.
2. Add the specified amount of this product and nonionic surfactant near the end of the filling process and mix well.
3. During mixing and application, foaming of the spray solution may occur. To prevent or minimize foaming, 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.

#### **AquaPro – Tank Mix**

This product does not provide residual weed control. For residual weed control or an alternate mode of action, tank mix this product with other herbicides. Read and carefully observe the precautionary 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.

Under certain conditions, at certain growth stages, and/or under other circumstances, some tank mix products have the potential to cause injury. Read all labels for products used in the tank mix prior to using them to determine the potential for crop injury.

Tank mixing with other herbicides, insecticides, fungicides, micronutrients or foliar fertilizers may result in reduced weed control or injury. Do not use these products in applications with this product unless otherwise noted in this label. Buyer and all users are responsible for all loss or damage in connection with the use or handling of mixtures of this product with herbicides or other materials that are not expressly specified in this labeling. Mixing this product with herbicides or other materials not specified on this label may result in reduced performance.

The user is responsible for ensuring that the specific application being made is included on the label of the product used in the tank mix when a tank mixture with a generic active ingredient, including 2,4-D, atrazine, dicamba, diuron, or pendimethalin, is used.

Read all individual product labels for all products in the tank mix and observe all precautions and restrictions on the label. Use according to the most restrictive directions for each product in the tank mix. Always predetermine the compatibility of all tank mix products, together in the carrier, by mixing small proportional quantities in advance of mixing and applying them to the use site. Add the tank mix product to the tank as directed by the label. Maintain agitation and add the required amount of this product.

Maintain good agitation at all times until the contents in the tank are sprayed. If the mixture is allowed to settle, thorough agitation is required to resuspend the mixture before spraying resumes. Keep the bypass line on or near the bottom of the tank to minimize foaming. The screen size in the nozzle or line strainers should be no finer than 50 mesh.

**NOTE:** If tank mixing with Garlon® 3A Herbicide, ensure that Garlon 3A is well mixed with at least 75 percent of the total spray volume before adding this product to the spray tank to avoid incompatibility.

### **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:

### **Nonionic Surfactant**

When using this product, unless otherwise specified, mix with a surfactant, including a nonionic surfactant containing 80% or more active ingredient. For conifer release (pine release), use only surfactants that are approved for conifer release and specified on the surfactant label as safe for use in conifer release. Using this product without surfactant will result in reduced herbicide 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 directions.

### **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 precautionary statements and all other information appearing on the additive label.

### **APPLICATION EQUIPMENT AND APPLICATION METHODS**

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

Apply spray solutions in properly maintained and calibrated equipment capable of delivering desired volumes.

This product may be applied with the following application equipment and application methods.

### **Aerial Application**

**Equipment:** Fixed wing and helicopter

Do not apply this product using aerial spray equipment except under conditions as specified within this label.

Do not aerially apply this product in California.

**Avoid drift.** Do not apply 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, maintain appropriate buffer zones.

Do not directly apply to any body of water.

Use the specified rates of this herbicide in 3 to 25 gallons of water per acre unless otherwise specified on this label. Refer to the specific use directions of this label for volumes and application rates.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations that dispense spray as fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure. A drift control additive may be used. When a drift control additive is used, carefully read and observe the precautionary statements and all other information specified on the additive label.

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

### **Ground Application**

**Equipment:** Boom or boomless systems, pull-type sprayer, floaters, pick-up sprayers, spray coupes and other 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 on this label. As density of weeds increases, increase the spray volume within the rate 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 Including Backpack Application**

**Equipment:** Knapsack and backpack sprayers, pump up pressure sprayers, handguns, hand wands, mistblowers, lances, and other hand-held and motorized spray equipment used to direct the spray onto weed foliage. **Note:** This product is not registered in Arizona or California for use in mistblowers.

Apply to foliage of vegetation to be controlled. Do not spray to the point of runoff for applications made on a spray to wet basis. Use coarse sprays only. For best results, cover the top half of the plant and at least half of the total foliage. To ensure adequate spray coverage, spray both

sides of large or tall woody brush and trees, when foliage is thick and dense, or where there are multiple sprouts.

**High Volume Sprays:** Prepare a 3/4 to 2 percent solution of this product in water, add a nonionic surfactant and apply to foliage of vegetation to be controlled. For specific rates of application and instructions for control of various annual and perennial weeds, see the Weeds Controlled section.

Make applications on a spray to wet basis with uniform and complete spray coverage. Do not spray to point of runoff.

**Low volume directed sprays:** This product may be used as a **5 to 10 percent solution** in low volume directed sprays for spot treatment of trees and brush. This treatment method is most effective in areas where there is a low density of undesirable trees or brush. If a straight stream nozzle is used, start the application at the top of the targeted vegetation and spray from top to bottom in a lateral zigzag motion. Ensure that at least 50 percent of the leaves are contacted by the spray solution. For flat fan and cone nozzles and with hand-directed mist blowers, mist the application over the foliage of the targeted vegetation. Treat small, open-branched trees only from one side. If the foliage is thick or there are multiple root sprouts, apply from several sides to ensure adequate spray coverage.

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 This Product								
	0.5	0.75	1	1.25	1.5	2	5	8	10
<b>1 gal</b>	2/3 fl oz	1 fl oz	1 1/3 fl oz	1 2/3 fl oz	2 fl oz	2 2/3 fl oz	6 1/2 fl oz	10 1/4 fl oz	13 fl oz
<b>25 gal</b>	1 pt	1 1/2 pt	1 qt	1 1/4 qt	1 1/2 qt	2 qt	1 1/4 gal	2 gal	2 1/2 gal
<b>100 gal</b>	2 qt	3 qt	1 gal	1 1/4 gal	1 1/2 gal	2 gal	5 gal	8 gal	10 gal

2 Tablespoons = 1 fl oz

For best results when using knapsack sprayers, mix the specified amount of product with water in a larger container. Fill the knapsack sprayer with the solution and add the correct amount of surfactant.

**Selective Equipment**

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

Do not contact desirable vegetation with herbicide. Droplets, mist, foam, or splatter of the herbicide settling on desirable vegetation is likely to result in discoloration, stunting or destruction.

Better results are 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 weeds varies so that not all weeds are contacted. If this occurs, repeat treatment may be necessary.

**Shielded and Hooded Applicators:** A shielded or hooded applicator directs the herbicide solution onto weeds while shielding desirable vegetation from the herbicide. Use nozzles that provide uniform coverage within the treated area. Keep shields on these sprayers adjusted to protect desirable vegetation. **Exercise extreme care to avoid contact of the herbicide with desirable vegetation.**

**Wiper Applicators:** Wiper applicators are devices that physically wipe appropriate amounts of this product directly onto the weed. Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting desirable vegetation.

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

Operate this equipment at ground speeds no more 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 two applications are made in opposite directions.

Droplets, mist, foam, or splatter of the herbicide settling onto desirable vegetation may result in discoloration, stunting or destruction. 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 one-day period as reduced activity may result from use of leftover solutions. Clean wiper parts by thoroughly flushing with water immediately after using this product.

For best results, use a nonionic surfactant at a rate of 10 percent by volume of total herbicide solution for all wiper applications.

**Injection Systems**

**Equipment:** Aerial or ground injection sprayers.

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.

**Controlled Droplet Applicator (CDA)**

**Equipment:** Hand-held or boom-mounted applicators that produce a spray consisting of a narrow range of droplet sizes.

The rate of this product applied per acre by vehicle-mounted CDA equipment must not be less than the amount specified on 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 fl oz per minute and a walking speed of 1.5 mph (1 1/2 pints of product per acre). For control of perennial weeds, apply a 20 to 40 percent solution of this product at a flow rate of 2 fl oz per minute and a walking speed of 0.75 mph (3 to 6 pints of product per acre).

CDA equipment produces a spray pattern that is not easily visible. Exercise extreme care to avoid spray or drift contacting the foliage or any other green tissue of desirable vegetation as damage or destruction may result.

**USE SITES**

Use this product in noncrop areas, including airports, apartment complexes, aquatic sites, commercial sites, Conservation Reserve Program (CRP) areas, ditch banks, driveways, dry ditches, dry canals, fencerows, golf courses, habitat management, industrial areas, lumber yards, manufacturing sites, municipal sites, natural areas, office complexes, parking areas, parks, pastures, petroleum tank farms and pumping installations, public areas, railroads, rangeland, recreation areas, utility rights-of-way, roadsides, sports complexes, storage areas, substations, turfgrass areas, utility sites, warehouse areas, wildlife habitat management areas, and in grazed areas on these sites.

**AQUATIC SITES**

This product may be applied to emerged weeds in all bodies of fresh and brackish water that may be flowing, nonflowing or transient including lakes, rivers, streams, ponds, estuaries, rice levees, seeps, irrigation and drainage ditches, canals, reservoirs, wastewater treatment facilities, wildlife habitat restoration and management areas and similar sites.

If aquatic sites are present in the noncrop area and are part of the intended treatment, read and observe the following directions:

- This product does not control plants that are completely submerged or have a majority of their foliage under water.
- There is no restriction on the use of treated water for irrigation, recreation or domestic purposes.
- Consult local and state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.
- To make aquatic applications around and within 1/2 mile of active

potable water intakes, the water intake must be turned off for a minimum period of 48 hours after the application. The water intake may be turned on prior to 48 hours if the glyphosate level in the intake water is below 0.7 parts per million as determined by laboratory analysis. These aquatic applications may be made only in those cases where there are alternative water sources or holding ponds which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the application.

- For treatments after draw down of water or in dry ditches, allow 7 days or more after treatment before reintroduction of water to achieve maximum weed control. Apply this product within 1 day after draw down to ensure application to actively growing weeds.
- Floating mats of vegetation may require retreatment. Avoid wash off of sprayed foliage by spray boat or recreational boat backwash or by rainfall within 6 hours of application. Do not re-treat within 24 hours following the initial treatment.
- Applications made to moving bodies of water must be made while traveling upstream to prevent concentration of this herbicide in water. When making any bankside applications, do not overlap more than 1 foot into open water. Do not spray in bodies of water where weeds do not exist. The maximum application rate of 7½ pints per acre must not be exceeded in any single broadcast application that is being made over water.
- When emerged infestations require treatment of the total surface area of impounded water, treating the area in strips may avoid oxygen depletion due to decaying vegetation. Oxygen depletion may result in fish kill.

#### Restrictions:

- Do not apply this product directly to water within 1/2 mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.), or within 1/2 mile of an active potable water intake in a standing body of water, such as a lake, pond or reservoir. This restriction does not apply to intermittent inadvertent overspray of water in terrestrial use sites.

#### WETLAND SITES

This product may be applied to undesirable vegetation in and around water (aquatic areas) and wetlands found in forestry, utility rights-of-way sites or other site listed on the label, including where these sites are adjacent to or surrounding domestic water supply reservoirs, supply streams, lakes and ponds.

If wetland sites are present, read and observe the following directions:

- There is no restriction on the use of treated water for irrigation, recreation or domestic purposes.
- Consult local public water control authorities before applying this product in and around public water. Permits may be required to treat in such areas.

#### Restrictions:

- Do not apply this product directly to water within 1/2 mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.), or within 1/2 mile of an active potable water intake in a standing body of water, such as a lake, pond or reservoir. This restriction does not apply to intermittent inadvertent overspray of water in terrestrial use sites.
- Do not spray open bodies of water where woody brush, trees and herbaceous weeds do not exist. Do not apply more than 3 3/4 quarts per acre in a single over water broadcast application except in stream crossings in utility right-of-way or where applications will result in less than 20 percent of the total water area being treated. In either of these locations, any specified rate may be applied:

#### CUT STUMP

Treat cut stumps in any noncrop site listed on this label. This product will control regrowth of freshly 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 freshly cut surface immediately after cutting. Delays in application may result in reduced performance. For best results, make applications during periods of active growth and full leaf expansion.

When used according to directions for cut stump application, this product will **control, partially control or suppress** most woody brush and tree species, some of which are listed below:

#### Common Name

Alder  
Coyotebrush †  
Dogwood †  
Eucalyptus  
Hickory †  
Madrone, Pacific  
Maple †  
Oak  
Peppertree, Brazilian  
Australian-pine,  
Poplar †  
Reed, giant  
Saltcedar  
Sweet gum †  
Sycamore †  
Tan oak  
Willow

#### Scientific Name

*Alnus* spp.  
*Baccharis pilularis*  
*Cornus* spp.  
*Eucalyptus* spp.  
*Carya* spp.  
*Arbutus menziesii*  
*Acer* spp.  
*Quercus* spp.  
*Schinus terebinthifolius*  
*Casuarina equisetifolia*  
*Populus* spp.  
*Arundo donax*  
*Tamarix ramosissima*  
*Liquidambar styraciflua*  
*Platanus occidentalis*  
*Lithocarpus densiflorus*  
*Salix* spp.

† Do not use this product on these species in the state of California.

#### Precautions and Restrictions:

- Do not make cut stump applications when the roots of desirable woody brush or trees may be grafted to the roots of the cut stump. Some sprouts, stems, or trees may share the same root system.
- Adjacent trees that are of a similar age, height and spacing may indicate shared roots.
- Injury is likely to occur to non-treated stems or trees when one tree or more that shares a common root is treated.

#### INJECTION AND FRILL (WOODY BRUSH AND TREES)

Woody vegetation may be controlled by injection or frill application of this product. Apply this product using suitable equipment that penetrates into the living tissue. Apply the equivalent of 1 mL of this product per each two to three inches of trunk diameter at breast height (DBH). This is best achieved by applying 50 to 100 percent concentration of this product either to a continuous frill around the tree or as cuts evenly spaced around the tree below all branches. As tree diameter increases in size, better results are achieved by applying diluted material to a continuous frill or more closely spaced cuttings. Do not make any applications that allow runoff to occur from frilled or cut areas in species that exude sap freely. In species such as this, make frill or cuts at an oblique angle to produce a cupping effect and use a 100 percent undiluted concentration of this product. For best results, apply during periods of active growth and full leaf expansion.

#### This product controls the following woody species:

##### Common Name

Oak  
Poplar  
Sweetgum  
Sycamore

##### Scientific Name

*Quercus* spp.  
*Populus* spp.  
*Liquidambar styraciflua*  
*Platanus occidentalis*

#### This product suppresses the following woody species:

##### Common Name

Black gum †  
Dogwood  
Hickory  
Maple, red

##### Scientific Name

*Nyssa sylvatica*  
*Cornus* spp.  
*Carya* spp.  
*Acer rubrum*

† Do not use this product on these species in the state of California.

#### NONCROP AREAS AND INDUSTRIAL SITES

See the rate tables in the Annual Weeds, Perennial Weeds, and Woody Brush and Trees sections for specific application rates. This product has no herbicidal or residual activity in the soil. Where repeat applications are necessary, do not apply more than 8 quarts of this product per acre per year.

Use a higher rate in the rate range for control or partial control of woody brush, trees, and hard to control perennial herbaceous weeds. For best results, apply to actively growing woody brush and trees after full leaf expansion and before fall color and leaf drop. Use increased rates within the rate range for difficult to control species, where dense stands occur, or where conditions for control are not ideal and to control perennial herbaceous weeds from emergence up to the appearance of seedheads, flowers or berries. Use a lower rate in the rate range to control annual herbaceous weeds and actively growing perennial herbaceous weeds after seedheads, flowers or berries appear. Apply to foliage of actively growing annual herbaceous weeds anytime after emergence.

### **Tank Mixing for Noncrop Areas**

This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled. When tank mixing, read and observe applicable use directions, precautions and limitations on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

Maintain good agitation at all times during the mixing process and application. Ensure that the tank mix product(s) is well mixed with the spray solution before adding this product. Mix only the amount of spray solution that will be used during the same day. Reduced weed control may result if a tank mixture is allowed to stand overnight. If the spray mix is allowed to settle, thorough agitation is required to resuspend the mixture before spraying is resumed.

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

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

To maintain bare ground, repeated applications of this product may be used.

This product provides control of emerged annual weeds and control or partial control of emerged perennial weeds, woody brush and trees when applied in a tank mix to bare ground.

### **WILDLIFE HABITAT MANAGEMENT**

This product may be used to control exotic and other undesirable vegetation in habitat management and natural areas, including rangeland and wildlife refuges. Apply to allow recovery of native plant species, prior to planting desirable native species, and for broad spectrum vegetation control. Apply spot treatments to selectively remove unwanted plants for habitat enhancement.

### **Wildlife Food Plots**

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 tilling to allow translocation into underground plant parts.

### **HOLLOW STEM INJECTION**

Apply this product to control giant knotweed (*Polygonum sachalinense*), Japanese knotweed (*Polygonum cuspidatum*), or other invasive knotweeds using individual stem treatment. Use a hand-held injection device that delivers the specified amount of this product into these hollow stem plants.

Make a hole through both sides of the stem about 6 inches above the ground, just below a node, using an awl or other pointed tool. Inject 5 mL of undiluted product directly into this hole in the hollow stem. Treat each stem of the knotweed plant.

### **Restrictions:**

- Do not apply more than a total of 8 quarts of this product per acre for all treatments combined. At 5 mL per stem, 8 quarts will treat approximately 1420 stems per acre.

### **PARKS, RECREATIONAL AND RESIDENTIAL AREAS**

Use this product in parks, recreational and residential areas. Apply it with any application equipment described in this label. Use this product to trim and edge around trees, fences, paths, around buildings, sidewalks, and other objects in these areas. This product may be used for spot treatment of unwanted vegetation, eliminate unwanted weeds growing in established shrub beds or ornamental plantings, and prior to planting an area to ornamentals, flowers, turfgrass (sod or seed), or prior to laying asphalt or beginning construction projects.

All of the label instructions apply to park and recreational areas.

### **RAILROADS**

All of the instructions in the Noncrop Areas and Industrial Sites and Roadside sections apply to railroads.

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

Use this product to maintain bare ground on railroad ballast and shoulders. Repeat applications of this product may be used as weeds emerge to maintain bare ground. Use this product to control tall growing weeds to improve line of sight at railroad crossings and reduce the need for mowing along rights-of-way.

### **Brush Control**

Apply 3 to 8 quarts of this product per acre as a broadcast spray, using boom-type or boomless nozzles. Applications up to 80 gallons of spray solution per acre may be used. Apply a 3/4 to 1.5 percent solution of this product when using high volume spray to wet applications. Apply a 5 to 10 percent solution of this product when using low volume directed sprays for spot treatment.

### **ROADSIDES**

All of the instructions in the Noncrop Areas and Industrial Sites and Railroads sections apply to roadsides.

### **Shoulder Treatments**

Use this product on road shoulders. Apply it with boom sprayers, shielded boom sprayers, high volume off-center nozzles, OC nozzle clusters, manifold nozzle systems, hand-held equipment, and similar equipment, and under-deck mowing plus herbicide systems..

### **Guardrails and Other Obstacles to Mowing**

Use this product to control weeds growing under guardrails and around signposts and other objects along the roadside.

### **Spot Treatment**

Use this product as a spot treatment to control unwanted vegetation growing along roadsides.

**Tank Mixes:** This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled and for residual weed control. Follow applicable use directions, precautions and limitations on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

### **Chemical Mowing**

**Perennials:** This product suppresses perennial grasses listed in this section to serve as a substitute for mowing. Use 4.5 fl oz of this product per acre when treating Kentucky bluegrass, tall fescue, fine fescue, orchardgrass, or quackgrass. Apply 12 fl oz of this product per acre when treating bermudagrass. Apply 4.5 to 8 fl oz of this product per acre when treating bahiagrass. Use the higher rates when grass is under heat stress. Apply 3 pints of this product per acre when treating torpedograss or paragrass. Apply treatments in 10 to 20 gallons of spray solution per acre.

**Annuals:** For growth suppression of some annual grasses, including annual ryegrass, wild barley and wild oats growing in coarse turfgrass on roadsides or other industrial areas, apply 3 to 3.75 fl oz of this product in 10 to 40 gallons of spray solution per acre. Apply when annual grasses are actively growing and before the seedheads are in the boot stage of development. Treatments may cause injury to the desired grasses.

### **Release of Dormant Bermudagrass or Bahiagrass**

Apply 6 to 48 fl oz of this product per acre in 10 to 40 gallons of water per acre. Use only in areas where bermudagrass or bahiagrass are desirable groundcovers and where some temporary injury or discoloration can be tolerated. Treatments of more than 12 fl oz per acre may result in injury or delayed greenup in highly maintained areas, including golf courses and lawns.

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

**Tank Mixes:** This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled and for residual weed control. When tank mixing, read and follow all applicable use directions, precautions, and limitation on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

### Actively Growing Bermudagrass

Use this product to control or partially control many annual and perennial weeds for effective release of actively growing bermudagrass. Use only in areas where some temporary injury or discoloration can be tolerated. Use only on well-established bermudagrass. Bermudagrass injury may result from the treatment, but regrowth will occur under moist conditions. Repeat applications of the tank mix in the same season are not specified since severe injury may occur.

Apply up to 2.25 pints of this product in 10 to 40 gallons of spray solution per acre. Use the lower rate when treating annual weeds less than 6 inches in height (or runner length). Use the higher rate as weeds increase in size or as they approach flower or seedhead formation.

### Actively Growing Bahiagrass

For suppression of vegetable growth and seedhead inhibition of bahiagrass for approximately 45 days, apply 4.5 fl oz of this product in 10 to 40 gallons of water per acre. Apply one to two weeks after full greenup or after mowing to a uniform height of 3 to 4 inches. Make this application prior to seedhead emergence. For suppression up to 120 days, apply 3 fl oz of this product per acre, followed by an application of 1.5 to 3 fl oz per acre about 45 days later. Make no more than two applications per year.

**Tank Mixes:** This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled and for residual weed control. When tank mixing, read and follow all applicable use directions, precautions, and limitation on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

### UTILITY SITES

Use this product for control of brush, tree, and weed control and side trimming in areas including electrical power, pipeline and telephone rights-of-ways, and other sites associated with these rights-of-ways including substations, roadsides, and railroads. This product may be applied with any application equipment or method described on this label unless specifically prohibited.

**Tank Mixes:** This product may be used in tank mix combination with other herbicide products to broaden the spectrum of vegetation controlled and for residual weed control. When tank mixing, read and follow all applicable use directions, precautions, and limitation on the respective product labels. Use according to the most restrictive precautionary statements for each product in the mixture. Any specified rate of this product may be used in a tank mix.

### RANGELANDS

Use this product to control or suppress many annual weeds growing in perennial cool and warm season grass rangelands. Preventing weed seed production is critical to the successful control of annual grassy weeds invading these perennial grass sites. Eliminate most of the viable seeds with follow up applications in sequential years. Delay grazing of treated areas to encourage growth of desirable perennials. Allowing desirable perennials to flower and reseed in the treated area will encourage successful transition.

**Bromus:** Use this product to control or suppress downy brome/cheatgrass (*Bromus tectorum*), Japanese brome (*Bromus japonicus*), soft chess (*Bromus mollis*), cheat (*Bromus secalinus*), cereal rye and jointed goatgrass. Apply 6 to 12 fl oz of this product per acre as a broadcast treatment.

For best results, coincide treatments with early seedhead emergence of the most mature plants. Delaying the application until this growth stage maximizes the emergence of other weedy grass flushes. Make applications to the same site each year until seed banks are depleted and the desirable perennial grasses become established on the site.

**Medusahead:** Apply 12 fl oz of this product per acre to control or suppress medusahead at the 3-leaf stage when plants are actively growing. Delaying applications beyond this stage results in reduced or unacceptable control. Repeat applications in subsequent years to eliminate the seed bank before reestablishing desirable perennial grasses. Apply in the fall or spring.

Apply by ground or air. Make aerial applications for these uses with fixed wing or helicopter equipment. For aerial applications, apply in 2 to 10 gallons of water per acre. For ground applications, apply in at least 10 to 20 gallons of water per acre.

### Spot Treatment and Wiper Application

Apply this product in rangeland, pastures, or industrial sites as a spot treatment or over the top of desirable grasses using wiper applicators to control tall weeds. See Wiper Application section for specific instructions. Make repeat applications in the same area at 30-day intervals.

The entire site or any portion of it may be treated when using 2.25 quarts or less of this product per acre for spot treatments or wiper applications. No more than 10 percent of the total site may be treated at any one time when using more than 2.25 quarts of this product per acre for spot treatments or wiper applications. To achieve maximum performance, remove domestic livestock before application and wait 7 days after application before grazing livestock or harvesting for feed.

### PASTURES

**Type of Pastures:** Bahiagrass, bermudagrass, bluegrass, brome, fescue, orchardgrass, ryegrass, timothy, wheatgrass, alfalfa, clover

### Spot Treatment and Wiper Application

This product may be applied as a spot treatment or as a wiper application. Make applications in the same area at 30-day intervals. See Wiper Application section for specific instructions.

### Precautions and Restrictions:

- For spot treatment and wiper applications, the entire field or any portion of it may be treated when using a rate of 2.25 quarts or less per acre.
- Do not treat more than 10 percent of any acre at one time if applying more than 2.25 quarts per acre as a spot treatment or wiper application.
- To achieve maximum performance, remove domestic livestock before application and wait 14 days after application before grazing livestock or harvesting.

### Preplant, Preemergence, and Pasture Renovation

Apply this product 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 and Restrictions:

- If the application rates total 2.25 quarts or less per acre, there is no waiting period between treatment and feeding or livestock grazing is required.
- If the application rates total more than 2.25 quarts per acre, remove domestic livestock before application and wait eight weeks after application before grazing or harvesting.
- Crops listed for treatment in this label may be planted into the treated area at any time. Wait 30 days between application and planting for all other crops.

### BAMBOO

Use this product on roadside rights-of way to control or suppress bamboo. Use the higher rate in the rate range for dense stands and larger plants. Mow or cut bamboo and allow it to resprout to have sufficient foliage in order for the spray solution to completely cover the foliage. Optimum control or suppression of bamboo is achieved when this product is applied between August and October (prior to frost). One application of this product plus a surfactant will not eradicate bamboo. Several mowings and applications are required to completely control bamboo.

Apply the specified rate plus a surfactant (1/4 to 1/2% v/v), such as a nonionic surfactant containing 80% active ingredient or more. Using this product without a surfactant results in reduced performance.

Application Method	Rate	Spray Volume (gal/acre)
ground broadcast	1.5 – 7.5 qt/acre	10 - 60
handgun spray to wet	0.75 – 2%	spray to wet
handgun or backpack low volume directed spray	4 – 10%	spray to cover

### Restrictions:

- Do not apply more than a total of 8 quarts of this product per acre per year.



**ANNUAL WEEDS, PERENIAL WEEDS, AND WOODY BRUSH AND TREES**

**Annual Weeds**

Apply 24 fl oz of this product per acre if weeds are less than 6 inches in height or runner length. Use 1.25 to 3 quarts of this product per acre if weeds are more than 6 inches in height or runner length or when weeds are growing under stressed conditions. Use a higher rate in the rate range for tough to control species regardless of the size of the weed at the time of application. Treat tough to control weeds when they are relatively small. Tank mix this product with only those products that are labeled for application at the target site. Refer to the label of the tank mix partner for use sites and application rates.

Apply a 0.4 percent solution of this product as a spray to wet application to weeds less than 6 inches in height or runner length. Use a 0.7 to 1.5 percent solution for annual weeds more than 6 inches tall or for smaller weeds growing under stressed conditions. Use the higher concentration for tough to control species or for weeds more than 24 inches tall. Apply prior to seedhead formation in grass or bud formation in broadleaf weeds.

Use a 4 to 7 percent solution of this product for low volume directed spray applications. Spray coverage should be uniform with at least 50 percent of the foliage contacted. For best results, cover the top one-half of the plant. To ensure adequate spray coverage, spray both sides of large or tall weeds when foliage is thick and dense or where there are multiple sprouts.

<b>Common Name</b>	<b>Scientific Name</b>
anoda, spurred	<i>Anoda cristata</i>
balsamapple <sup>1</sup>	<i>Momordica charantia</i>
barley	<i>Hordeum vulgare</i>
barnyardgrass	<i>Echinochloa crus-galli</i>
bassia, fivehook	<i>Bassia hyssopifolia</i>
bittercress	<i>Cardamine</i> spp.
bluegrass, annual	<i>Poa annua</i>
bluegrass, bulbous	<i>Poa bulbosa</i>
brome, downy/cheatgrass	<i>Bromus tectorum</i>
brome, Japanese	<i>Bromus japonicus</i>
buttercup	<i>Ranunculus</i> spp.
Carolina foxtail	<i>Alopecurus carolinianus</i>
Carolina geranium	<i>Geranium carolinianum</i>
castorbean	<i>Ricinus communis</i>
chamomile, mayweed	<i>Anthemis cotula</i>
cheat	<i>Bromus secalinus</i>
chervil	<i>Anthriscus cerefolium</i>
chickweed	<i>Cerastium vulgatum</i>
cocklebur, common	<i>Xanthium strumarium</i>
coreopsis, plains	<i>Coreopsis tinctoria</i>
corn, volunteer	<i>Zea mays</i>
crabgrass	<i>Digitaria</i> spp.
dwarf dandelion, Virginia	<i>Krigia virginica</i>
eastern mannagrass	<i>Glyceria</i> spp.
eclipta	<i>Eclipta prostrata</i>
falsedandelion	<i>Pyrhropappus carolinianus</i>
falseflax, smallseed	<i>Camelina microcarpa</i>
fiddleneck	<i>Amsinckia</i> spp.
field pennycress	<i>Thlaspi arvense</i>
fleabane, annual	<i>Erigeron annuus</i>
fleabane, hairy	<i>Conyza bonariensis</i>
fleabane, rough	<i>Erigeron strigosus</i>
Florida pusley	<i>Richardia scabra</i>
foxtail	<i>Setaria</i> spp.
goatgrass, jointed	<i>Aegilops cylindrica</i>
goosegrass	<i>Eleusine indica</i>
groundsel, common	<i>Senecio vulgaris</i>
henbit	<i>Lamium amplexicaule</i>
horseweed/marestail	<i>Conyza canadensis</i>
itchgrass	<i>Rottboellia cochinchinensis</i>
johnsongrass	<i>Sorghum halepense</i>
junglerice	<i>Echinochloa colona</i>
knotweed	<i>Polygonum</i> spp.
kochia <sup>2</sup>	<i>Kochia scoparia</i>
lambquarters, common	<i>Chenopodium album</i>
mallow, little	<i>Malva parviflora</i>
medusahead	<i>Taeniatherum caput-medusae</i>
morningglory	<i>Ipomoea</i> spp.
mustard, blue	<i>Chorispora tenella</i>

mustard, tumble  
mustard, wild  
oats, wild  
panicum, fall  
pigweed, redroot  
pigweed, smooth  
prickly lettuce  
puncturevine  
purslane, common  
ragweed, common  
ragweed, giant  
rocket, London  
Russian-thistle  
rye, cereal  
ryegrass, Italian<sup>3</sup>  
sandbur, field  
sesbania, hemp  
shattercane  
shepherd's-purse  
sicklepod  
signalgrass, broadleaf  
smartweed, Pennsylvania  
sowthistle, annual  
Spanishneedles<sup>3</sup>  
speedwell, corn  
speedwell, purslane  
sprangletop  
spurge, annual  
spurge, prostrate  
spurge, spotted  
spurry, umbrella  
stinkgrass  
sunflower, common  
tansymustard, pinnate  
teaweed/sida, prickly  
Texas panicum  
velvetleaf  
Virginia pepperweed  
wheat  
witchgrass  
woolly cupgrass  
yellow rocket

*Sisymbrium altissimum*  
*Sinapis arvensis*  
*Avena fatua*  
*Panicum dichotomiflorum*  
*Amaranthus retroflexus*  
*Amaranthus hybridus*  
*Lactuca serriola*  
*Tribulus terrestris*  
*Portulaca oleracea*  
*Ambrosia artemisiifolia*  
*Ambrosia trifida*  
*Sisymbrium irio*  
*Salsola tragus*  
*Secale cereale*  
*Lolium perenne*  
*Cenchrus spinifex*  
*Sesbania herbacea*  
*Sorghum bicolor*  
*Capsella bursa-pastoris*  
*Senna obtusifolia*  
*Urochloa platyphylla*  
*Polygonum pensylvanicum*  
*Sonchus oleraceus*  
*Bidens bipinnata*  
*Veronica arvensis*  
*Veronica peregrina*  
*Leptochloa* spp.  
*Chamaesyce* spp.  
*Chamaesyce humistrata*  
*Chamaesyce maculata*  
*Holosteum umbellatum*  
*Eragrostis cilianensis*  
*Helianthus annuus*  
*Descurainia pinnata*  
*Sida spinosa*  
*Panicum* spp.  
*Abutilon theophrasti*  
*Lepidium virginicum*  
*Triticum aestivum*  
*Panicum capillare*  
*Eriochloa villosa*  
*Barbarea vulgaris*

<sup>1</sup> Apply with hand-held equipment only.  
<sup>2</sup> Do not treat kochia in the button stage.  
<sup>3</sup> Apply 3 pints of product per acre.

**Perennial Weeds**

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

When using spray to wet treatments with hand-held equipment, ensure thorough coverage of the plant. For best results, use a 1.5 percent solution on harder to control perennials including bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle.

Use a 4 to 7 percent solution of this product in low volume directed spray applications. Spray coverage should be uniform with at least 50 percent of the foliage contacted. For best results, cover the top one-half of the plant. To ensure adequate spray coverage, spray both sides of large or tall weeds when foliage is thick and dense or where there are multiple sprouts.

Allow 7 days or more after application before tillage.

<b>Common Name</b>	<b>Scientific Name</b>
alfalfa	<i>Medicago sativa</i>
alligatorweed <sup>1</sup>	<i>Alternanthera philoxeroides</i>
anise/fennel	<i>Foeniculum vulgare</i>
artichoke, Jerusalem	<i>Helianthus tuberosus</i>
bahiagrass	<i>Paspalum notatum</i>
beachgrass, European	<i>Ammophila arenaria</i>
bentgrass	<i>Agrostis</i> spp.
bermudagrass	<i>Cynodon dactylon</i>

(continued)

**Common Name**

bindweed, field  
bluegrass, Kentucky  
blueweed, Texas  
brackenfern  
brome, smooth  
bursage, woollyleaf  
canarygrass, reed  
cattail  
clover, red  
clover, white  
cogongrass  
cordgrass  
cutgrass, giant<sup>1</sup>  
dallisgrass  
dandelion  
dock, curly  
dogbane, hemp  
fescue  
fescue, tall  
German ivy  
guineagrass  
horsenettle  
horseradish  
iceplant, crystalline  
johnsongrass  
kikuyugrass  
knapweed, Russian  
lantana, largeleaf  
lespedeza, common  
lespedeza, sericea  
loosestrife, purple  
lotus, American  
maidencane  
milkweed  
muhly, wirestem  
mullein, common  
napiergrass  
nightshade, silverleaf  
nutsedge, purple  
nutsedge, yellow  
orchardgrass  
pampasgrass  
paragrass  
phragmites<sup>2</sup>  
poison-hemlock  
quackgrass  
redvine  
reed, giant  
ryegrass, perennial  
smartweed, swamp  
sowthistle, perennial  
spatterdock  
starthistle, yellow  
sweet potato, wild<sup>1</sup>  
thistle, artichoke  
thistle, Canada  
timothy  
torpedograss<sup>1</sup>  
trumpetcreeper  
tules, common  
vaseygrass  
velvetgrass  
waterhyacinth  
waterlettuce  
waterprimrose  
wheatgrass, western

**Scientific Name**

*Convolvulus arvensis*  
*Poa pratensis*  
*Helianthus ciliaris*  
*Pteridium aquilinum*  
*Bromus inermis*  
*Ambrosia grayi*  
*Phalaris arundinacea*  
*Typha* spp.  
*Trifolium pratense*  
*Trifolium repens*  
*Imperata cylindrica*  
*Spartina* spp.  
*Zizaniopsis miliacea*  
*Paspalum dilatatum*  
*Taraxacum officinale*  
*Rumex crispus*  
*Apocynum cannabinum*  
*Festuca* spp.  
*Lolium arundinaceum*  
*Senecio mikanioides*  
*Urochloa maxima*  
*Solanum carolinense*  
*Armoracia rusticana*  
*Mesembryanthemum crystallinum*  
*Sorghum halepense*  
*Pennisetum clandestinum*  
*Acroptilon repens*  
*Lantana camara*  
*Kummerowia striata*  
*Lespedeza cuneata*  
*Lythrum salicaria*  
*Nelumbo lutea*  
*Panicum hemitomon*  
*Asclepias* spp.  
*Muhlenbergia frondosa*  
*Verbascum thapsus*  
*Pennisetum purpureum*  
*Solanum elaeagnifolium*  
*Cyperus rotundus*  
*Cyperus esculentus*  
*Dactylis glomerata*  
*Cortaderia selloana*  
*Urochloa mutica*  
*Phragmites* spp.  
*Conium maculatum*  
*Elymus repens*  
*Brunnichia ovata*  
*Arundo donax*  
*Lolium perenne*  
*Polygonum amphibium*  
*Sonchus arvensis*  
*Nuphar lutea*  
*Centaurea solstitialis*  
*Ipomoea pandurata*  
*Cynara cardunculus*  
*Cirsium arvense*  
*Phleum pratense*  
*Panicum repens*  
*Campsis radicans*  
*Scirpus acutus*  
*Paspalum urvillei*  
*Holcus* spp.  
*Eichornia crassipes*  
*Pistia stratiotes*  
*Ludwigia* spp.  
*Pascopyrum smithii*

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

Ensure thorough coverage when using hand-held equipment.

See Low Volume Directed Spray Application section of label. Spray coverage should be uniform with at least 50 percent of the foliage contacted. For best results, cover the top half to 2/3 of the plant foliage. Spray both sides of large or tall woody brush and trees to ensure adequate spray coverage when foliage is thick and dense or where there are multiple sprouts. Symptoms may not appear prior to frost or senescence with fall treatments.

Allow seven days or more 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.

**Note:** If brush has been mowed or tilled, or trees have been cut, do not treat until regrowth has reached the specified stage of growth.

This product will control, partially control, or suppress the following woody brush and trees.

**Common Name**

alder  
ash<sup>1</sup>  
aspens, quaking  
bearclover, bearmat  
beach  
birch  
bittercherry  
blackberry  
blackgum  
blue gum, Tasmanian  
brackenfern  
broom, French  
broom, Scotch  
buckwheat, California<sup>1</sup>  
cascara<sup>1</sup>  
catclaw-vine<sup>1</sup>  
ceanothus  
chamise  
cherry  
cherry, black  
cherry, pin  
copperleaf, hophornbeam  
coyotebrush  
deer vetch  
dewberry, southern  
dogwood  
elderberry  
elm<sup>1</sup>  
gorse  
hasardia<sup>1</sup>  
hawthorn  
hazel  
hickory  
holly, Florida  
honeysuckle  
hornbeam, American  
kudzu  
locust, black<sup>1</sup>  
madrone, Pacific  
manzanita  
maple  
maple, red<sup>1</sup>  
maple, sugar  
maple, vine<sup>1</sup>  
monkeyflower<sup>1</sup>  
oak  
oak, black<sup>1</sup>  
oak, pin  
oak, post  
oak, red

**Scientific Name**

*Alnus* spp.  
*Fraxinus* spp.  
*Populus tremuloides*  
*Ceanothus prostratus*  
*Fagus* spp.  
*Betula* spp.  
*Prunus emarginata*  
*Rubus* spp.  
*Nyssa sylvatica*  
*Eucalyptus globulus*  
*Pteridium aquilinum*  
*Genista monspessulana*  
*Cytisus scoparius*  
*Eriogonum fasciculatum*  
*Fragula purshiana*  
*Macfadyena unguis-cati*  
*Ceanothus* spp.  
*Adenostoma fasciculatum*  
*Prunus* spp.  
*Prunus serotina*  
*Prunus pensylvanica*  
*Acalypha ostryifolia*  
*Baccharis pilularis*  
*Lotus unifoliolatus*  
*Rubus trivialis*  
*Cornus* spp.  
*Sambucus nigra*  
*Ulmus* spp.  
*Ulex europaeus*  
*Haplopappus squamosus*  
*Crataegus* spp.  
*Corylus* spp.  
*Carya* spp.  
*Schinus terebinthifolius*  
*Lonicera* spp.  
*Carpinus caroliniana*  
*Pueraria montana*  
*Robinia pseudoacacia*  
*Arbutus menziesii*  
*Arctostaphylos* spp.  
*Acer* spp.  
*Acer rubrum*  
*Acer saccharum*  
*Acer circinatum*  
*Mimulus guttatus*  
*Quercus* spp.  
*Quercus kelloggii*  
*Quercus palustris*  
*Quercus stellata*  
*Quercus rubra*

<sup>1</sup> Partial control.

<sup>2</sup> Partial control in southeastern states.

**Woody Brush and Trees**

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

(continued)

oak, southern red  
oak, white<sup>1</sup>  
peppertree, Brazilian  
persimmon<sup>1</sup>  
pine  
poison-ivy, eastern  
poison-oak  
poison-sumac<sup>1</sup>  
prunus  
raspberry  
redbud, eastern  
rose, multiflora  
Russian-olive  
sage,; black, white  
sagebrush, California  
salmonberry  
saltcedar<sup>1</sup>  
saltbush, sea myrtle  
sassafras  
sourwood<sup>1</sup>  
sumac, smooth<sup>1</sup>  
sumac, dwarf<sup>1</sup>  
sweetgum  
swordfern<sup>1</sup>  
tallowtree, Chinese  
oak, tanbark resprouts  
thimbleberry, western  
tobacco, tree<sup>1</sup>  
trumpetcreeper  
Virginia-creeper<sup>1</sup>  
waxmyrtle, southern<sup>1</sup>  
willow  
yellow-poplar<sup>1</sup>  
yerba santa

*Quercus falcata*  
*Quercus alba*  
*Schinus terebinthifolius*  
*Diospyros* spp.  
*Pknus* spp.  
*Toxicodendron radicans*  
*Toxicodendron* spp.  
*Toxicodendron vernix*  
*Prunus* spp.  
*Rubus* spp.  
*Cercis canadensis*  
*Rosa multiflora*  
*Elaeagnus angustifolia*  
*Salvia* spp.  
*Artemisia californica*  
*Rubus spectabilis*  
*Tamarix ramosissima*  
*Baccharis halimifolia*  
*Sassafras albidum*  
*Oxydendrum arboreum*  
*Rhus glabra*  
*Rhus copallinum*  
*Liquidambar styraciflua*  
*Polystichum munitum*  
*Triadica sebifera*  
*Lithocarpus densiflorus*  
*Rubus parviflorus*  
*Nicotiana glauca*  
*Campsis radicans*  
*Parthenocissus quinquefolia*  
*Myrica cerifera*  
*Salix* spp.  
*Liriodendron tulipifera*  
*Eriodictyon californicum*

<sup>1</sup> Partial control

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