

**ROUNDUP® RAINFAST™**

HERBICIDE BY MONSANTO

AVOID CONTACT WITH FOLIAGE, GREEN STEMS, OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES, SINCE SEVERE INJURY OR DESTRUCTION MAY RESULT

Carefully follow detailed instructions in attached literature booklet

Read the entire label before using this product.

Use only according to label instructions.

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

REFORMULATION OR REPACKAGING IS PROHIBITED.

**PRECAUTIONARY STATEMENTS**

Hazards to  
Humans and Domestic Animals

Keep out of reach of children.

**WARNING!**

CAUSES SUBSTANTIAL BUT TEMPORARY EYE INJURY  
HARMFUL IF SWALLOWED OR INHALED  
MAY CAUSE SKIN IRRITATION.

Do not get in eyes, on skin or on clothing.

Avoid breathing vapors or spray mist.

Wash thoroughly with soap and water after handling.

**FIRST AID: IF IN EYES,** immediately flush with plenty of water for at least 15 minutes. Get medical attention.

**IF ON SKIN,** immediately flush with plenty of water while removing contaminated clothing. Wash clothing before reuse. If irritation persists, get medical attention.

**IF INHALED,** remove individual to fresh air. If breathing difficulty develops, get medical attention.

**IF SWALLOWED,** this product will cause gastrointestinal irritation. Immediately dilute by swallowing water or milk. Get medical attention.

In case of an emergency involving this product,  
Call Collect, day or night, (314) 684-4000

**Environmental Hazards**

Do not apply directly to water or wetland (swamps, bays, marshes or pastures). Do not contaminate water when disposing of equipment washwaters.

**Physical or Chemical Hazards**

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

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

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in any manner inconsistent with its labeling.

**Storage and Disposal**

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

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

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is destroyed.

Do not reuse container. Triple rinse container, then puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

(See label booklet for Complete Directions for Use)

**LIMIT OF WARRANTY AND LIABILITY**

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

Buyer and all users shall promptly notify this Company of any claims whether based in contract, negligence, strict liability, other tort or otherwise.

Buyer and all users are responsible for all loss or damage from use or handling which results from conditions beyond the control of this Company, including, but not limited to, incompatibility with products other than those set forth in the Directions, application to soil with desirable vegetation, unusual weather, weather conditions which are outside the range considered normal at the application site and for the time period when the product is applied, as well as weather conditions which are outside the application ranges set forth in the Directions, application in any manner not explicitly set forth in the Directions, moisture conditions outside the moisture range specified in the Directions, or the presence of products other than those set forth in the Directions in or on the soil, crop or treated vegetation.

THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE LIMIT OF THE LIABILITY OF THIS COMPANY OR ANY OTHER SELLER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT (INCLUDING CLAIMS BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE) SHALL BE THE PURCHASE PRICE PAID BY THE USER OR BUYER FOR THE QUANTITY OF THIS PRODUCT INVOLVED, OR, AT THE ELECTION OF THIS COMPANY OR ANY OTHER SELLER, THE REPLACEMENT OF SUCH QUANTITY, OR, IF NOT ACQUIRED BY PURCHASE, REPLACEMENT OF SUCH QUANTITY. IN NO EVENT SHALL THIS COMPANY OR ANY OTHER SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

Buyer and all users are deemed to have accepted the terms of this LIMIT OF WARRANTY AND LIABILITY which may not be varied by any verbal or written agreement.

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**ACTIVE INGREDIENTS:**

*Glyphosate, N-(phosphonomethyl) glycine, in the form of its isopropylamine salt	25.1%
<b>INERT INGREDIENTS:</b>	<b>74.9%</b>
	<b>100.0%</b>

\*Contains 278 grams per litre or 2.30 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its isopropylamine salt. Equivalent to 204 grams per litre or 1.71 pounds per U.S. gallon of the acid, glyphosate.

Product protected by U.S. Pat. Nos. 3,788,798 and 4,405,331. Other patents pending. No license granted under any non-U.S. patent.

MONSANTO COMPANY  
AGRICULTURAL PRODUCTS  
ST. LOUIS, MISSOURI 63167, U.S.A.

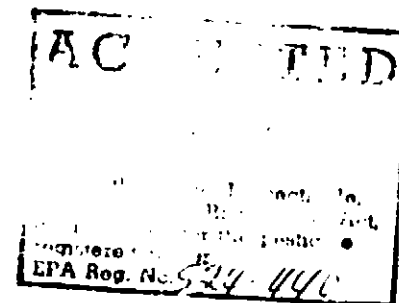
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**NET 30 GAL**

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•Roundup is a registered trademark of Monsanto Company.

\*Rainfast is a trademark of Monsanto Company.

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Buyer and all users shall promptly notify this Company of any claims whether based in contract, negligence, strict liability, other tort or otherwise.

Buyer and all users are responsible for all loss or damage from use or handling which results from conditions beyond the control of this Company, including, but not limited to, incompatibility with products other than those set forth in the Directions, application to or contact with desirable vegetation, unusual weather, weather conditions which are outside the range considered normal at the application site and for the time period

when the product is applied, as well as weather conditions which are outside the application ranges set forth in the Directions, application in any manner not explicitly set forth in the Directions, moisture conditions outside the moisture range specified in the Directions or the presence of products other than those set forth in the Directions, in or on the soil, crop, or treated vegetation.

THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE LIMIT OF THE LIABILITY OF THIS COMPANY OR ANY OTHER SELLER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT (INCLUDING CLAIMS BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE) SHALL BE THE PURCHASE PRICE PAID BY THE USER OR BUYER FOR THE QUANTITY OF THIS PRODUCT INVOLVED, OR, AT THE ELECTION OF THIS COMPANY OR ANY OTHER SELLER, THE REPLACEMENT OF SUCH QUANTITY, OR, IF NOT ACQUIRED BY PURCHASE, REPLACEMENT OF SUCH QUANTITY. IN NO EVENT SHALL THIS COMPANY OR ANY OTHER SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

Buyer and all users are deemed to have accepted the terms of this LIMIT OF WARRANTY AND LIABILITY which may not be varied by any verbal or written agreement.

**PRECAUTIONARY STATEMENTS**

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Humans and Domestic Animals**

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**MAY CAUSE SKIN IRRITATION.**

**Do not get in eyes, on skin or on clothing.**

**Avoid breathing vapors or spray mist.**

**Wash thoroughly with soap and water after handling.**

**FIRST AID: IF IN EYES, immediately flush with plenty of water for at least 15 minutes. Get medical attention.**

**IF ON SKIN, immediately flush with plenty of water while removing contaminated clothing. Wash clothing before reuse. If irritation persists, get medical attention.**

IF INHALED, remove individual to fresh air. If breathing difficulty develops, get medical attention.

IF SWALLOWED, this product will cause gastrointestinal irritation. Immediately dilute by swallowing water or milk. Get medical attention.

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

**Environmental Hazards**

Do not apply directly to water or wetland (swamps, bogs, marshes or potholes). Do not contaminate water when disposing of equipment washwaters.

**Physical or Chemical Hazards**

Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fiberglass, plastic and 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.

**ACTIVE INGREDIENT:**

\*Glyphosate, N-(phosphonomethyl) glycine,  
in the form of its isopropylamine salt. . . . 25.1%

INERT INGREDIENTS: . . . . . 74.9%

100.0%

\*Contains 276 grams per litre or 2.30 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its isopropylamine salt. Equivalent to 204 grams per litre or 1.71 pounds per U.S. gallon of the acid, glyphosate.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in any manner inconsistent with its labeling.

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**STORAGE AND DISPOSAL**

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

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

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is destroyed.

Do not reuse container. Triple rinse container, then puncture and dispose of in a sanitary landfill, or by incinerating, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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**GENERAL INFORMATION**

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

This product, a water soluble liquid, mixes readily with water to be applied as a foliar spray for the control or destruction of most herbaceous plants. It may be applied through most standard industrial or field-type sprayers after dilution and thorough mixing with water in accordance with label instructions.

This product moves through the plant from the point of foliage contact to and into the root system.

Unless otherwise specified on this label, delay application until vegetation has emerged and reached the stages described for control of such vegetation under the "Weeds Controlled" section of this label.

Always use the higher rate of this product per acre within the recommended range when (1) weed growth is heavy or dense, or (2) weeds are growing in an undisturbed (noncultivated) area.

For best results treat actively growing weeds. Drought-stressed, diseased or insect damaged plants, or weeds heavily covered with dust may not adequately respond to treatment.

If weeds have been mowed, grazed, or cut, allow to regrow to the recommended stage prior to treatment.

Do not apply during rainfall.

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.

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

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

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

**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.

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

**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.

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**MIXING, ADDITIVES AND  
APPLICATION INSTRUCTIONS**

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**APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES. DO NOT APPLY UNDER WIND OR OTHER CONDITIONS WHICH ALLOW DRIFT TO OCCUR. HAND GUN APPLICATIONS SHOULD BE PROPERLY DIRECTED TO AVOID SPRAYING DESIRABLE PLANTS. NOTE: REDUCED RESULTS MAY OCCUR IF WATER CONTAINING SOIL IS USED, such as WATER FROM PONDS AND UNLINED DITCHES.**

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**MIXING**

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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 proper amount of this product (see "Directions for Use" and "Weeds Controlled" sections of this label) near the end of the filling process and mix well. Remove hose from tank immediately after filling to avoid siphoning back into the carrier source. During mixing and application foaming of the spray solution may occur. To prevent or minimize foam, avoid the use of mechanical agitators, place the filling hose below the surface of the spray solution, terminate by-pass and return lines at the bottom of the tank and if needed use an approved anti-foam or defoaming agent.

**TANK MIXTURES**

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

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 sprayer tank one-half full with water and start agitation.
3. If a wettable powder is used, make a slurry with the water carrier, and add it SLOWLY through the screen into the tank. Continue agitation.
4. If a flowable formulation is used, premix one part flowable with one part water. Add diluted mixture SLOWLY through the screen into the tank. Continue agitation.

5. If an emulsifiable concentrate formulation is used, premix one part emulsifiable concentrate with two parts water. Add diluted mixture slowly through the screen into the tank. Continue agitation.
6. Continue filling the sprayer tank with water and add the required amount of this product near the end of the filling.
7. Add individual formulations to the spray tank as follows: wettable powder, flowable, emulsifiable concentrate, drift control additive, water soluble liquid followed by surfactant.

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 bottom of tank to minimize foaming. Screen size in nozzle or line strainers should be no finer than 50 mesh. Carefully select proper nozzle to avoid spraying a fine mist. For best results with conventional ground application equipment, use flat fan nozzles.

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

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**ADDITIVES**

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**SURFACTANTS**

Nonionic surfactants which are labeled for use with herbicides may be used. Do not reduce rates of this herbicide when adding surfactant. When adding additional surfactant, use 0.5 percent surfactant concentration (2 quarts per 100 gallons of spray solution) when using surfactants which contain at least 50 percent active ingredient, or a 1 percent surfactant concentration (4 quarts per 100 gallons of spray solution) for those surfactants containing less than 50 percent active ingredient. Read and carefully observe surfactant cautionary statements and other information appearing on the surfactant label.

**AMMONIUM SULFATE**

The addition of 2 percent dry ammonium sulfate by weight or 17 pounds per 100 gallons of water may increase the performance of this product on annual and perennial weeds. The improvement in performance may be apparent where environmental stress is a



concern. Low-quality ammonium sulfate may contain material that will not readily dissolve which could result in nozzle tip plugging. To determine quality, perform a jar test by adding 1/3 cup of ammonium sulfate to 1 gallon of water and agitate for 1 minute. If undissolved sediment is observed, predissolve the ammonium sulfate in water and filter prior to addition to the spray tank. If ammonium sulfate is added directly to the spray tank, add slowly with agitation. Adding too quickly may clog outlet lines. Ensure that ammonium sulfate is completely dissolved in the spray tank before adding herbicides or surfactant. Thoroughly rinse the spray system with clean water after use to reduce corrosion.

NOTE: The use of ammonium sulfate as an additive does not preclude the need for additional surfactant. Do not use herbicide rates lower than recommended in this label.

#### 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.

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#### APPLICATION EQUIPMENT AND TECHNIQUES

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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.**

**Broadcast Spray**

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

**Hand-held and High-Volume Spray Equipment-** Knapsack and backpack sprayers, pump-up pressure sprayers, handguns, handwands, lances and other hand-held spray equipment used to direct the spray onto weed foliage and vehicle mounted high-volume spray equipment for spray-to-wet applications.

**Selective equipment -** Shielded sprayers and wiper applicators.

See the appropriate part of this section for specific rates of application and instructions.

**AERIAL EQUIPMENT**

Use the recommended rates of this herbicide in 3 to 15 gallons of water per acre unless otherwise specified on this label. See the "Weeds Controlled" section of this label for specific rates. Unless otherwise specified, do not exceed the 56-ounce rate per acre of this product.

(Aerial applications of this product may be made in annual cropping conventional tillage systems, fallow and reduced tillage systems, preharvest and rights-of-way. Refer to the individual use area sections of this label for recommended volumes and application rates).

Avoid direct application to any body of water.

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

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.

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

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

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

**BROADCAST EQUIPMENT**

**For control of annual or perennial weeds listed on this label using broadcast equipment-** Use the recommended rates of this product in 3 to 40 gallons of water per acre as a broadcast spray unless otherwise specified on this label. See the "Weeds Controlled" section of this label for specific rates. As density

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

**CONTROLLED DROPLET  
APPLICATION (CDA)**

The rate of this product applied per acre by vehicle-mounted CDA equipment must not be less than the amount recommended in this label when applied by conventional broadcast equipment. For vehicle-mounted CDA equipment apply 3 to 20 gallons of water per acre.

For the control of labeled annual weeds with hand-held CDA units, apply a 36 percent solution of this product at a flow rate of 3.5 fluid ounces per minute and a walking speed of 1.5 MPH (56 ounces per acre). For the control of labeled perennial weeds, apply a 36 to 72 percent solution of this product at a flow rate of 3.5 fluid ounces per minute and a walking speed of 0.75 MPH (3.5 to 7 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.

**HAND-HELD and HIGH-VOLUME  
EQUIPMENT**

**Use coarse sprays only.**

Mix this product in clean water and 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.

For control of annual weeds listed on this label, apply a 1 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 broadleaves. Allow three or more days before tillage or mowing.

For annual weeds over 6 inches tall, or when not using additional surfactant, or unless otherwise specified, use a 2 percent solution. For best results, use a 3.5 percent solution on harder-to-control perennials, such as bermudagrass, dock, field bindweed, hemp dogbane, milkweed, Canada thistle and torpedograss.

Less than complete coverage of weeds may result from the use of

spray equipment designed for motorized spot treatments. Where less than complete coverage of annual weeds occurs, use a 9 percent solution. Do not reduce recommended concentrations of this product when adding surfactant.

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 PRODUCT				
	1%	2%	3%	3-1/2%	9%
1 gallon	1-1/4 oz	2-1/2 oz	4 oz	4-1/2 oz	11-1/2 oz
25 gals	2 pts	2 qts	3 qts	3-1/2 qts	9 qts
100 gals	4 qts	2 gal	3 gal	3-1/2 gal	9 gal

2 tablespoons = 1 ounce

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

For hand-held WIPER APPLICATORS see the "Selective Equipment" section and for hand-held CONTROLLED DROPLET APPLICATORS see the "Controlled Droplet Applicator (CDA)" section of this label.

### SELECTIVE EQUIPMENT

This product may be applied through a shielded applicator or a wiper applicator after dilution and thorough mixing with water to listed weeds growing in any noncrop site specified on this label and only when specifically recommended in cropping systems.

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

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

**AVOID CONTACT WITH DESIRABLE VEGETATION** - Contact of the herbicide solution with the desirable vegetation may result in damage or destruction. Applicators used above desired vegetation

should be adjusted so that the lowest wiper contact point is at least two 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.

See the "Weeds Controlled" section of this label for recommended stage of growth for specific weeds.

#### NOTE

- Maintain equipment in good operating condition. Avoid leakage or dripping onto desirable vegetation.
- Adjust height of applicator to insure adequate contact with weeds.
- Keep nozzle tips and wiping surfaces clean.
- Keep shields on shielded applicators adjusted to protect desirable vegetation.
- Maintain recommended roller RPM on roller applicators while in use.
- Keep wiper material at proper degree of saturation with herbicide solution.
- Equipment speed affects wiper deposition. For best results, operate equipment at less than 5 mph. As weed density increases, reduce equipment ground speed to ensure good coverage.
- Be aware that on sloping ground the herbicide solution may migrate, causing dripping on the lower end and drying on the upper end of a wiper applicator.
- Variation in equipment design may affect weed control. With wiper applicators, the wiping material and its orientation must allow delivery of sufficient quantities of the recommended herbicide solution directly to the weed.
- Care must be taken with all types of wipers to ensure that the absorbent material does not become over-saturated,

causing the herbicide to drip on desirable vegetation.

- Drain and clean sprayer and wiper parts immediately after using this product by thoroughly flushing with water.

**SHIELDED APPLICATORS**

When applied as directed under conditions described for shielded applicators, this product will control those weeds listed in the "Weeds Controlled" section of this label.

Shielded applicators which may apply the herbicide solution as a spray band should be calibrated on a broadcast equivalent rate and volume basis. To determine these:

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

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

Use nozzles that provide uniform coverage within the treated area. EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT WITH DESIRABLE VEGETATION.

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

**WIPER APPLICATORS**

Wiper applicators include either roller or wick devices which physically wipe appropriate concentrations or amounts of this product directly onto the weed. Equipment must be designed, maintained, and operated to prevent the herbicide solution from contacting desirable vegetation. 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.

**For Roller Applicators-** Mix an 18 percent solution of this product. Apply this solution to perennial weeds or annual broadleaf weeds listed in the "Weeds Controlled" and "Wiper Applications" sections.

Mix a 5 percent solution of this product. Apply this solution to

annual grasses listed in the "Weeds Controlled" and "Wiper Applications" sections.

Roller speed should be maintained at 40 to 60 RPM.

For Wick or Wiper Applicators - Mix a 60 percent solution of this product. Apply this solution to weeds listed in the "Weeds Controlled" and "Wiper Applications" Sections.

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.

Do not permit herbicide solution to contact desirable vegetation.

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**WEEDS CONTROLLED**

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This herbicide controls many annual and perennial grasses and broadleaf weeds.

**ANNUAL WEEDS**

- For best results apply to actively growing grass and broadleaf weeds.
- To prevent seed production, applications should be made prior to seedhead formation.
- This product does not provide residual control; therefore, delay application until maximum weed emergence. Repeat treatments may be necessary to control later germinating weeds.

**LOW-VOLUME BROADCAST APPLICATION  
(LOW-RATE TECHNOLOGY)**

When applied as directed under the conditions described, this product will control the weeds listed below when:

- Water carrier volumes are 3 to 20 gallons per acre for ground applications and 3 to 5 gallons per acre for aerial applications. (See the "Aerial Application" section of this label for approved sites.)
- A nonionic surfactant added at 0.5 to 1 percent by total spray volume may increase performance of this product. Use 0.5 percent surfactant concentration when using surfactants which contain at least 50 percent active ingredient or a 1 percent surfactant concentration for those surfactants containing less than 50 percent active ingredient.

- The addition of 2 percent dry ammonium sulfate by weight or 17 pounds per 100 gallons of water may increase the performance of this herbicide on annual weeds. The improvement in performance may be apparent where environmental stress is a concern. Refer to the "Mixing, Additives and Application Instructions" section of this label.
- Check specific crop sections for residual tank mix recommendations.
- For weeds that have been mowed, grazed, or cut, allow regrowth to occur prior to treatment.
- Refer to the "Tank Mixtures" portion of this section for control of additional broadleaf weeds.

WEED SPECIES	MAXIMUM HEIGHT	RATE PER ACRE*
<b>Foxtail</b> <i>Setaria spp.</i>	12"	14 oz.
<b>Barnyardgrass</b> <i>Echinochloa crus-galli</i>	6"	21 oz
<b>Bluegrass, annual</b> <i>Poa annua</i>		
<b>Brome, downy</b> <i>Bromus tectorum</i>		
<b>Mustard, blue</b> <i>Chorispora tenella</i>		
<b>Mustard, tansy</b> <i>Descurainia pinnata</i>		
<b>Mustard, tumble</b> <i>Sisymbrium altissimum</i>		
<b>Mustard, wild</b> <i>Sinapis arvensis</i>		
<b>Spurry, umbrella</b> <i>Holosteum umbellatum</i>		
<b>Barley</b> <i>Hordeum vulgare</i>	12"	
<b>Rye</b>		



<b>Secale cereale</b>		
<b>Sandbur, field</b> Cenchrus spp.		
<b>Shattercane</b> Sorghum bicolor		
<b>Stinkgrass</b> Eragrostis cilianensis		
<b>Wheat</b> Triticum aestivum	18"	
<b>Morningglory</b> Ipomea spp.	2"	28 oz
<b>Sicklepod</b> Cassia obtusifolia		
<b>Bluegrass, bulbous</b> Poa bulbosa	6"	
<b>Cheat</b> Bromus secalinus		
<b>Chickweed, mouseear</b> Cerastium vulgatum		
<b>Corn</b> Zea mays		
<b>Groundsel, common</b> Senecio vulgaris		
<b>Horseweed/Marestail</b> Conyza canadensis		
<b>Lambsquarters, common</b> Chenopodium album		
<b>Pennycress, field</b> Fanweed Thlaspi arvense		
<b>Rocket, London</b> Sisymbrium irio		
<b>Ryegrass, Italian</b> Lolium multiflorum		
<b>Shepherdspurse</b>		

<b>Capsella bursa-pastoris</b>		
<b>Buttercup</b>	<b>12"</b>	
Ranunculus spp.		
<b>Cocklebur</b>		
Xanthium strumarium		
<b>Crabgrass</b>		
Digitaria spp.		
<b>Dwarf dandelion</b>		
Krigia cespitosa		
<b>Falseflax, smallseed</b>		
Camelina microcarpa		
<b>Footail, Carolina</b>		
Alopecurus carolinianus		
<b>Johnsongrass, seedling</b>		
Sorghum halepense		
<b>Oats, wild</b>		
Avena fatua		
<b>Panicum, fall</b>		
Panicum dichotomiflorum		
<b>Panicum, Texas</b>		
Panicum texanum		
<b>Pigweed, redroot</b>		
Amaranthus retroflexus		
<b>Pigweed, smooth</b>		
Amaranthus hybridus		
<b>Witchgrass</b>		
Panicum capillare		
<b>Sicklepod</b>	<b>3 to 4"</b>	<b>42 oz</b>
Cassia obtusifolia		
<b>Signalgrass, broadleaf</b>	<b>4"</b>	
Brachiaria platyphylla		
<b>Horseweed/Marestail</b>	<b>7 to 12"</b>	
Conyza canadensis		
<b>Lambsquarters, common</b>		
Chenopodium album		

<b>Teaweed</b> Sida spinosa	4"	56 oz
<b>Rice, red</b> Oryza sativa	6"	
<b>Geranium, Carolina</b> Geranium carolinianum	12"	
<b>Goosegrass</b> Eleusine indica		
<b>Primrose, cutleaf evening</b> Oenothera laciniata		
<b>Pusley, Florida</b> Richardia scabra		
<b>Sicklepod</b> Cassia obtusifolia	5 to 12"	
<b>Spanishneedles</b> Bidens bipinnata		
<b>Pilaree</b> Erodium spp.	12"	85 oz

\* For those rates less than 56 ounces per acre, rates up to 56 ounces per acre may be used where heavy weed densities exist.

**HIGH-VOLUME BROADCAST APPLICATIONS**

When applied as directed under the conditions described, this product will control the weeds listed below when water carrier volumes are 10 to 40 gallons per acre for ground applications. Use 56 ounces of this product per acre if weeds are less than 6 inches tall. If weeds are over 6 inches tall, use 85 ounces of this product per acre. If weeds have been mowed, grazed, or cut allow adequate time for new growth to recommended stages prior to treatment. These rates will also provide control of weeds listed in the "Low-Volume Broadcast Application" section.

**WEED SPECIES**

- |  |   |
|--|---|
| <b>Balsamapple*</b><br>Momordica charantia     | <b>Panicum</b><br>Panicum spp.                    |
| <b>Bassia, fivehook</b><br>Bassia hyssopifolia | <b>Ragweed, common</b><br>Ambrosia artemisiifolia |

<b>Brome</b> Bromus spp.	<b>Ragweed, giant</b> Ambrosia trifida
<b>Fiddleneck</b> Amsinckia spp.	<b>Smartweed, Pennsylvania</b> Polygonum pensilvanicum
<b>Flaxleaf Fleabane</b> Conyza bonariensis	<b>Sowthistle, annual</b> Sonchus olearaceus
<b>Fleabane</b> Erigeron spp.	<b>Sunflower</b> Helianthus annuus
<b>Kochia</b> Kochia scoparia	<b>Thistle, Russian</b> Salsola kalli
<b>Lettuce, prickly</b> Lactuca serriola	<b>Velvetleaf</b> Abutilon theophrasti

\*Apply with hand-held equipment only.

**PERENNIAL WEEDS**

Apply this product as follows to control or destroy most perennial weeds:

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

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

The addition of 2 percent dry ammonium sulfate by weight or 17 pounds per 100 gallons of water may increase the performance of this herbicide on perennial weeds. The improvement in performance may be apparent where environmental stress is a concern. Refer to the "Mixing, Additives and Application Instructions" section of this label.

When applied as recommended under the conditions described, this product WILL CONTROL the following PERENNIAL WEEDS:

<b>Alfalfa</b> Medicago sativa	<b>Horseradish</b> Armoracia rusticana
<b>Alligatorweed*</b> Alternanthera philoxeroides	<b>Johnsongrass</b> Sorghum halepense
<b>Artichoke, Jerusalem</b> Helianthus tuberosus	<b>Kikuyugrass</b> Pennisetum clandestinum

**Bahiagrass**  
*Paspalum notatum*

**Bentgrass**  
*Agrostis* spp.

**Bernudagrass**  
*Cynodon dactylon*

**Bindweed, field**  
*Convolvulus arvensis*

**Bluegrass, Kentucky**  
*Poa* spp.

**Blueweed, Texas**  
*Helianthus ciliaris*

**Brackenfern**  
*Pteridium aquilinum*

**Bromegrass, smooth**  
*Bromus inermis*

**Bursage, woollyleaf**  
*Franseria tomentosa*

**Canarygrass, reed**  
*Phalaris arundinacea*

**Cattail**  
*Typha* spp.

**Clover, red**  
*Trifolium pratense*

**Clover, white**  
*Trifolium repens*

**Cogongrass**  
*Imperata cylindrica*

**Dallisgrass**  
*Paspalum dilatatum*

**Dandelion**  
*Taraxacum officinale*

**Knapweed**  
*Centaurea repens*

**Lantana**  
*Lantana camara*

**Milkweed**  
*Asclepias* spp.

**Muhly, wirestem**  
*Muhlenbergia frondosa*

**Muellein, common**  
*Verbascum thapsus*

**Napiergrass**  
*Pennisetum purpureum*

**Nightshade, silverleaf**  
*Solanum elaeagnifolium*

**Nutsedge, purple, yellow**  
*Cyperus rotundus*  
*Cyperus esculentus*

**Orchardgrass**  
*Dactylis glomerata*

**Pampas**  
*Cortaderia jubata*

**Paragrass**  
*Brachiaria mutica*

**Phragmites\***  
*Phragmites* spp.

**Quackgrass**  
*Agropyron repens*

**Reed, giant**  
*Arundo donax*

**Ryegrass, perennial**  
*Lolium perenne*

**Smartweed, swamp**  
*Polygonum coccineum*

**Sweet potato, wild, \***  
*Ipomoea pandurata*

<b>Dock, curly</b> Rumex crispus	<b>Thistle, Canada</b> Cirsium arvense
<b>Dogbane, hemp</b> Apocynum cannabinum	<b>Timothy</b> Phleum pratense
<b>Fescues</b> Festuca spp.	<b>Torpedograss*</b> Panicum repens
<b>Fescue, tall</b> Festuca arundinacea	<b>Vaseygrass</b> Papalum urvillei
<b>Guineagrass</b> Panicum maximum	<b>Wheatgrass, western</b> Agropyron smithii
<b>Horsenettle</b> Solanum carolinense	

\* Partial Control

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See "Directions for Use" and "Mixing, Additives and Application Instructions" sections of this label for labeled uses and specific application instructions.

**Alfalfa** - Apply 56 ounces of this product per acre in 3 to 20 gallons of water per acre. Make application 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** - Apply 7 quarts of this product per acre or apply a 3 percent solution with hand-held equipment to provide partial control. Apply when most of the plants are in bloom. Repeat applications will be required to maintain such control.

**Bentgrass** - For suppression in grass seed production areas. For ground applications only, apply 85 ounces of this product in 10 to 20 gallons of water per acre. Ensure entire crown area has resumed growth prior to a fall application. Bentgrass should be actively growing and have at least 3 inches of growth. Tillage prior to treatment should be avoided. Tillage 7 to 10 days after application is recommended for best results. Failure to use tillage after treatment may result in unacceptable control.

**Bermudagrass** - For control, apply 9 quarts of this product per acre and for partial control, apply 5-1/3 quarts per acre. Treat when bermudagrass is actively growing and seedheads are present. Retreatment may be necessary to maintain control. Allow 7 or more days after application before tillage.

**Bindweed, field/Blueweed, Texas** - Apply 5-1/3 to 7 quarts per acre. Apply when weed is actively growing and is at or beyond full bloom. Do not treat when weed is under drought stress as good soil moisture is necessary for active growth. New leaf development indicates active growth. For best results, apply in late summer or fall. Fall treatments must be applied before a killing frost. Allow 7 or more days after application before tillage.

**Bluegrass, Kentucky/Bromegrass, smooth/Orchardgrass** - Apply 3-1/2 quarts of this product in 10 to 40 gallons of water per acre when the grasses are actively growing and most plants have reached boot-to-early seedhead stage of development. For partial control in pasture or hay crop renovation apply 56 to 85 ounces of this product in 3 to 20 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height. Allow 7 or more days after application before tillage.

**Orchardgrass (sods going to no-till corn)** - Apply 56 to 85 ounces of this product per acre 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 three days following application before planting. A sequential application of 3.75 to 4.5 quarts of Lariat® herbicide, or equivalent, will be necessary for optimum results. Lariat should be applied within 3 to 10 days following spring applications to prevent annual weed growth.

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**Brackenfern** -- Apply 5-1/3 to 7 quarts of this product per acre as a broadcast spray or as a 2 to 3 percent solution with hand-held equipment. Apply to fully expanded fronds which are at least 18 inches long.

**Bursage, woolyleaf** -- For control apply 3-1/2 quarts of this product plus 1 pint of Banvel per acre. For partial control apply 56 ounces of this product plus 1 pint of Banvel per acre. Apply 3 to 20 gallons of water 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, red/Timothy/Wheatgrass, western** -- Apply 3-1/2 to 5-1/2 quarts of this product per acre. For best results, apply to actively growing plants when most have reached the boot-to-head stage of growth. Allow 7 or more days after application before tillage.

**Cogongrass** - Apply 5-1/3 to 9 quarts of this product in 10 to 40 gallons of water per acre. Apply when cogongrass is at least 18 inches tall and actively growing in late summer or fall. Allow 7

or more days after application before tillage or mowing. Due to uneven stages of growth and the dense nature of vegetation preventing good spray coverage, repeat treatments may be necessary to maintain control.

**Dogbane, hemp/Knapweed/Horseradish** - Apply 7 quarts of this product per acre. Apply when actively growing and when most weeds 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. Allow 7 or more days after application before tillage.

**Fescue, tall** - Apply 5-1/3 quarts of this product in 10 to 40 gallons of water per acre to actively growing plants when most have reached boot-to-early seedhead stage of development.

**Fall applications only** - Apply 56 ounces of this product in 3 to 20 gallons of water per acre. Apply to fescue in the fall when actively growing and plants have 6 to 12 inches of new growth. Allow 7 or more days after application before tillage. A sequential application of 28 ounces per acre of this product will improve long-term control and control seedlings germinating after fall treatments or the following spring.

**Guineagrass** - Apply 5-1/3 quarts of this product per acre or use a 2 percent solution with hand-held equipment. Apply to actively growing guineagrass when most has reached at least the 7-leaf stage of growth. Ensure thorough coverage when using hand-held equipment. Allow 7 or more days after application before tillage.

**Johnsongrass/Ryegrass, perennial** - Apply 1-3/4 to 5-1/3 quarts of this product per acre. In annual cropping systems apply 1-3/4 to 3-1/2 quarts of this product per acre. Apply 1-3/4 quarts of this product in 3 to 20 gallons of water per acre. Use 3-1/2 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 performed, apply 3-1/2 to 5-1/3 quarts of this product in 10 to 40 gallons of water per acre. For best results, apply to actively growing plants when most 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 1-3/4 quart per acre rate.

For burndown of Johnsongrass, apply 28 ounces per acre in 3 to 20 gallons of water per acre before the plants reach a height of 12 inches. For this use, allow at least 3 days after treatment before tillage.

**Spot Treatment (partial control or suppression)** - Apply a 2 percent solution of this product when johnsongrass is 12 to 18



inches in height. Coverage should be uniform and complete.

**Kikuyugrass** - Apply 3-1/2 to 5-1/3 quarts of this product per acre. Spray when most kikuyugrass is at least 8 inches in height (3 or 4-leaf stage of growth) and actively growing. Allow 3 or more days after application before tillage.

**Lantana** - Apply this product as a 2 to 2-1/2 percent solution using hand-held equipment only. Apply to actively growing lantana at or beyond the bloom stage of growth. Use the higher application rate for plants that have reached the woody stage of growth. Allow 7 or more days after application before tillage.

**Milkweed, common** - Apply 5-1/3 quarts of this product per acre. Apply when actively growing and most of the milkweed has reached the late bud to flower stage of growth. Following small grain harvest or mowing, allow milkweed to regrow to a mature stage prior to treatment. Allow 7 or more days after application before tillage.

**Muhly, wirestem** - Apply 1-3/4 to 3-1/2 quarts of this product per acre. Use 1-3/4 quarts of this product in 3 to 20 gallons of water per acre. Use 3-1/2 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 and actively growing. 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. This product will not provide residual control of wirestem muhly from seeds which germinate after application. Do not tank mix with residual herbicides when using the 1-3/4 quart per acre rate.

**Nightshade, silverleaf** - For control apply 3-1/2 quarts of this product in 3 to 20 gallons of water per acre. Applications should be made when at least 60 percent of the plants have berries. Fall treatments must be applied before a killing frost. Allow 7 or more days after application before tillage. Do not treat when weed is under drought stress as good soil moisture is necessary for active growth.

**Nutsedge: purple, yellow** - Apply 5-1/3 quarts of this product per acre as a broadcast spray, or apply a 2 percent solution from hand-held equipment to control existing 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. Wait 7 days after treatment before tillage. Tillage will stimulate nutlet germination.

Apply 28 to 56 ounces of this product per acre in 3 to 40 gallons

of water per acre to provide suppression or partial control of existing nutsedge plants. Treat when plants have 3 to 5 leaves (less than 6 inches). Repeat treatments will be required to control subsequent emerging plants. Wait 7 days after treatment before tillage or mowing.

**Pampas** - Apply this product as a 3 to 3-1/2 percent solution using hand-held equipment. Apply to plants that are actively growing at or beyond the boot stage of growth. Thorough coverage is necessary for best control.

**Phragmites** - For partial control of phragmites in Florida and the counties of other states bordering the Gulf of Mexico, apply 9 quarts per acre as a broadcast spray or apply a 3-1/2 percent solution from hand-held equipment. In other areas of the U.S. apply 5-1/3 quarts per acre as a broadcast spray or apply a 2 percent solution from hand-held equipment 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 symptom will be slow to develop.

**Quackgrass - In Annual Cropping Systems, or in Pastures and Sods Followed by Deep Tillage:** Apply 1-3/4 to 3-1/2 quarts of this product per acre. For the 1-3/4 quart rate, apply in 3 to 20 gallons of water per acre. For the 3-1/2 quart rate, apply in 10 to 40 gallons of water per acre. Do not tank mix with residual herbicides when using the 1-3/4 quart rate. Spray when quackgrass is 8 to 12 inches in height and actively growing. 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, for best results use a moldboard plow.

**Quackgrass - Pasture or Sod or Other Noncrop Areas Where Deep Tillage is Not Planned Following Application:** Apply 3-1/2 to 5-1/3 quarts in 10 to 40 gallons of water per acre. Spray when the quackgrass is greater than 8 inches tall and actively growing. Do not till between harvest and fall application or in fall or spring prior to spring application. Allow 3 or more days after application before tillage.

**Reed, giant** - For control of giant reed, apply a 3-1/2 percent solution of this product when plants are actively growing. Best results are obtained when applications are made in late summer to fall.

**Sweet Potato, wild** - Apply this product as a 3-1/2 percent solution using hand-held equipment. Apply to actively growing

weeds that are at or beyond the bloom stage of growth. Repeat applications will be required. Allow the plant to reach the recommended stage of growth before retreatment. Allow 7 or more days before tillage.

**Thistle, Canada** - Apply 3-1/2 to 5-1/3 quarts of this product per acre. Apply to actively growing thistles when most are at or beyond the bud stage of growth. After harvest, mowing or tillage in the late summer or fall, allow at least 4 weeks for initiation of active growth and rosette development prior to the application of this product. Fall treatments must be applied before a killing frost. Allow 3 or more days after application before tillage.

For suppression of Canada thistle, apply 56 ounces per acre of this product 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.

**Torpedograss** - Apply 7 to 9 quarts of this product per acre to provide partial control of torpedograss. Apply to actively growing torpedograss 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. Allow 7 or more days after application before tillage.

**Other perennials listed on this label** - Apply 5-1/3 to 9 quarts of this product per acre. Apply when actively growing and most have reached early head or early bud stage of growth. Allow 7 or more days after application before tillage.

#### WIPER APPLICATIONS

When applied as recommended under the conditions described for "Wiper Applicators", this product CONTROLS the following weeds:

#### ANNUAL GRASSES

**Corn**  
Zea mays

**Rye, common**  
Secale cereale

**Panicum, Texas**  
Panicum texanum

**Shattercane**  
Sorghum bicolor

#### ANNUAL BROADLEAVES

**Sicklepod**  
Cassia obtusifolia

**Starbur, bristly**  
Acanthospermum  
hispidum

**Spanishneedles**  
*Bidens bipinnata*

When applied as recommended under the conditions described for "Wiper Applicators", this product **SUPPRESSES** the following weeds:

**ANNUAL BROADLEAVES**

**Beggarweed, Florida**  
*Desmodium*  
*tortuosum*

**Ragweed, giant**  
*Ambrosia trifida*

**Sunflower**  
*Helianthus annuus*

**Dogfennel**  
*Eupatorium*  
*capilliflorum*

**Thistle, musk**  
*Carduus nutans*

**Pigweed, redroot**  
*Amaranthus*  
*retroflexus*

**Velve+leaf**  
*Abutilon theophrasti*

**Ragweed, common**  
*Ambrosia artemisiifolia*

**PERENNIAL GRASSES**

**Bermudagrass**  
*Cynodon dactylon*

**Smugtgrass**  
*Sporobolus poiretii*

**Guineagrass**  
*Panicum maximum*

**Vaseygrass**  
*Paspalum urvillei*

**Johnsongrass**  
*Sorghum halepense*

**PERENNIAL BROADLEAVES**

**Dogbane**  
*Apocynum cannabinum*

**Nightshade, silverleaf**  
*Solanum elaeagnifolium*

**Milkweed**  
*Asclepias syriaca*

**Thistle, Canada**  
*Cirsium arvense*

**WOODY BRUSH AND TREES**

When applied as recommended under the condtions described, this product **CONTROLS** or **PARTIALLY CONTROLS** the following woody brush, plants and trees:

**Alder,**  
*Alnus spp.*

**Monkey Flower\***  
*Mimulus guttatus*

<b>Ash*</b> Fraxinus spp.	<b>Oak:</b> <b>Black*</b> Quercus velutina
<b>Aspen, quaking</b> Populus tremuloides	<b>Northern Pin</b> Quercus pallustris
<b>Bearcat (Bearclover)</b> Chamaebatia foliolosa	<b>Post</b> Quercus stellata
<b>Birch</b> Betula spp.	<b>Red</b> Quercus rubra
<b>Blackberry</b> Rubus spp.	<b>Southern Red</b> Quercus falcata
<b>Broom:</b> <b>French</b> Cytisus monspessulanus	<b>White*</b> Quercus alba
<b>Scotch</b> Cytisus scoparius	<b>Persimmon*</b> Diospyros spp.
<b>Buckwheat, California*</b> Eriogonum fasciculatum	<b>Poison Ivy</b> Rhus radicans
<b>Cascara*</b> Rhamnus purshiana	<b>Poison Oak</b> Rhus toxicodendron
<b>Catsclaw*</b> Acacia greggi	<b>Poplar*, yellow</b> Liriodendron tulipifera
<b>Ceanothus*</b> Ceanothus spp.	<b>Raspberry</b> Rubus spp.
<b>Chamise</b> Adenostoma fasciculatum	<b>Rose, multiliflora</b> Rosa multiliflora
<b>Cherry:</b> <b>Bitter</b> Prunus emarginata	<b>Russian - olive</b> Elaeagnus angustifolia
<b>Black</b> Prunus serotina	<b>Sage, black</b> Salvia mellifera
<b>Pin</b> Prunus pensylvanica	<b>Sagebrush, California</b> Artemisia californica
<b>Coyote brush</b> Baccharis consanguinea	<b>Salmonberry</b> Rubus spectabilis
	<b>Sassafras</b> Sassafras albidum

**Creeper, Virginia,\***  
Parthenocissus  
quinquefolia

**Dewberry**  
Rubus trivalis

**Elderberry**  
Sambucus spp.

**Elm\***  
Ulmus spp.

**Eucalyptus, Bluegum**  
Eucalyptus glotulus

**Hasardia\***  
Haplopappus squamosus

**Hawthorn**  
Crataegus spp.

**Hazel**  
Corylus spp.

**Honeysuckle**  
Lonicera spp.

**Kudzu**  
Pueraria lobata

**Locust, black\***  
Robinia pseudoacacia

**Madrone**  
Arbutus menziesii

**Mansanita**  
Arctostaphylos spp.

**Maple:**

**Red\*\***  
Acer rubrum

**Sugar**  
Acer saccharum

**Sourwood**  
Oxydendrum arboreum

**Sunac:**  
**Poison**  
Rhus vernix

**Smooth\***  
Rhus glabra

**Winged\***  
Rhus copallina

**Sweetgum**  
Liquidambar styraciflua

**Swordfern\***  
Polystichum munitum

**Tallowtree, Chinese**  
Sapium sebiferum

**Tan Oak**  
Lithocarpus densiflorus

**Thimbleberry**  
Rubus parviflorus

**Tobacco, tree\***  
Nicotiana glauca

**Trumpet creeper**  
Campsis raicans

**Willow**  
Salix spp.

**Vine\*****Acer circinatum****\* Partial control****\*\* See below for control or partial control instructions.**

**NOTE:** If brush has been mowed or tilled or trees have been cut, do not treat until regrowth has reached the recommended stages of growth.

Apply this product when plants are actively growing, and unless otherwise directed, after full leaf expansion. 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.

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.

See "Directions for Use", and "Mixing, Additives, and Application Instructions" sections of this label for labeled uses and specific application instructions.

Apply this product as follows to control or partially control the following woody brush and trees.

**Adler/Dewberry/Honeysuckle/Post Oak/Raspberry** - For control, apply 5-1/3 to 7 quarts per acre of this product as a broadcast spray or as a 2 to 3 percent solution with hand-held equipment.

**Aspen, quaking/Cherry: bitter, black, pin/Hawthorn/Oak: southern, red/Sweetgum/Trumpet creeper** - For control, apply 3-1/2 to 5-1/3 quarts of this product per acre as a broadcast spray or as a 2 to 3 percent solution with hand-held equipment.

**Birch/Elderberry/Hazel/Salmonberry/Thimbleberry** - For control, apply 3-1/2 quarts per acre of this product as a broadcast spray or as a 2 percent solution with hand-held equipment.

**Blackberry** - For control, apply 5-1/3 to 7 quarts per acre of this product as a broadcast spray, or 2 to 3 percent solution with hand-held equipment. Make application after plants have

reached full leaf maturity. Best results are obtained when applications are made in late summer or fall. After berries have set or dropped in late fall, blackberry can be controlled by applying a 1 percent solution of this product with hand-held equipment. For control of blackberries after leaf drop and until killing frost or as long as stems are green, apply 5-1/3 to 7 quarts of this product in 10 to 40 gallons of water per acre.

**Broom: French, Scotch** - For control, apply a 3 to 3.5 percent solution with hand-held equipment.

**Buckwheat, California/Hazardia/Monkey Flower/Tobacco, tree** - For partial control of these species, apply a 2 to 3.5 percent solution of this product as a foliar spray with hand-held equipment. Thorough coverage of foliage is necessary for best results.

**Catsclaw** - For partial control, apply as a 2 to 3 percent solution with hand-held equipment.

**Coyote Brush** - For control, apply a 2 to 3 percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed.

**Eucalyptus/Bluegum** - For control of eucalyptus resprouts, apply a 3 percent solution of this product with hand-held equipment when resprouts are 6 to 12 feet tall. Ensure complete coverage. Apply when plants are growing actively. Avoid application to drought-stressed plants.

**Kudzu** - For control, apply 7 quarts of this product per acre as a broadcast spray or as a 3.5 percent solution with hand-held equipment. Repeat applications will be required to maintain control.

**Madrone resprouts** - For suppression or partial control, apply a 3.5 percent solution of this product to resprouts less than 3 to 6 feet tall. Best results are obtained with spring/early summer treatments.

**Maple, red\*\*** - For control, apply as a 2 to 3 percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed. For partial control, apply 3-1/2 to 7 quarts of this product per acre as a broadcast spray.

**Maple, sugar/Oak, northern pin/Oak, red** - For control, apply as a 2 to 3 percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed.

**Poison Ivy/Poison Oak** - For control, apply 7 to 9 quarts of this product per acre as a broadcast spray or as a 3.5 percent solution with hand-held equipment. Repeat applications may be



required to maintain control. Fall treatments must be applied before leaves lose green color.

**Rose, multiflora** - For control, apply 3-1/2 quarts of this product per acre as a broadcast spray or as a 2 percent solution with hand-held equipment. Treatments should be made prior to leaf deterioration by leaf-feeding insects.

**Sage, black/Sagebrush, California/Chamise/Tallowtree, Chinese** - For control of these species apply a 2 percent solution of this product as a foliar spray with hand-held equipment. Thorough coverage of foliage is necessary for best results.

**Tan oak resprouts** - For suppression or partial control, apply a 3.5 percent solution of this product to resprouts less than 3 to 6 feet tall. Best results are obtained with fall applications.

**Willow** - For control, apply 5-1/3 quarts of this product per acre as a broadcast spray or as a 2 percent solution with hand-held equipment.

**Other Woody Brush and Trees listed on this label** - For partial control, apply 3-1/2 to 7 quarts of this product per acre as a broadcast spray or as a 2 to 3.5 percent solution with hand-held equipment.

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#### NONCROP USES

##### FARMSTEAD WEED CONTROL

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When applied as directed under conditions described, this product controls undesirable vegetation listed on this label around farmstead building foundations, along and in fences, shelterbelts, and for general nonselective farmstead weed control.

For specific rates of application and instruction for control of various annual and perennial weeds, see the "Weeds Controlled" section of this label.

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#### GRASSES FOR SEED PRODUCTION

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##### PREPLANT AND RENOVATION

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

For specific rates of application and instructions for control of various annual and perennial weeds, and woody brush and trees, see the "Weeds Controlled" section of this label.

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.

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.

**GRASSES FOR SEED PRODUCTION**

Apply this product to actively growing weeds at the stages of growth given in the "Weeds Controlled" section of this label prior to planting or renovation of turf or forage grass areas grown for seed production.

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

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**CROPPING SYSTEMS**

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See "General Information" and "Mixing, Additives and Application Instructions" sections of this label for essential product performance information.

See the following "Cropping Systems" sections for specific recommended uses.

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

Repeat treatments may be necessary to control weeds regenerating from underground parts or seed. Except as otherwise specified on this label, repeat treatments must be made before crop emerges in accordance with the instructions of this label.

Except as otherwise specified in a crop section of this label, the combined total of all treatments must not exceed 14.1 quarts per acre of this product per year.

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

For other cropping systems, except following spot treatment in forage grasses and legumes, do not harvest or feed treated crops for 8 weeks after application. Allow 14 days following spot treatment or selective equipment use before grazing domestic livestock or harvesting forage grasses and legumes.

When applied as directed for "Cropping Systems", under the conditions described, this product controls annual and perennial weeds listed on this label, prior to the emergence of direct seeded crops or prior to transplanting of crops listed on this label.

ALFALFA*	LENTILS
ARTICHOKE, JERUSALEM	LETTUCE
ASPARAGUS*	LOGANBERRY
ATEMOYA	MELONS***
BARLEY*	MUSTARD GREENS
BEANS (All)	OATS*
BEEF GREENS	OKRA
BEETS (Red, Sugar)	OLALLIEBERRY
BLACKBERRY	ONION
BLUEBERRY	PARSNIPS
BOYSENBERRY	PEANUTS
BROCCOLI	PEAS (All)
CABBAGE	PEPPER***
CARAMBOLA	PINEAPPLE****
CARROT	POTATO (Irish, Sweet)
CAULIFLOWER	PUMPKIN***
CELERY	RADISH
CHICORY	RASPBERRY (Black, Red)
CORN (All)*	RICE**
COTTON*	RUTABAGA
CRANBERRY	SORGHUM (Milo)
CUCUMBER***	SOYBEANS*
CURRANT	SPINACH
DEWBERRY	SQUASH*** (Summer, Winter)
EGGPLANT***	SUGAR APPLE
ELDERBERRY	SUGARCANE
FORAGE GRASSES*	TOMATILO***
FORAGE LEGUMES*	TOMATOES****†
GARLIC***	TURNIPS
GOOSEBERRY	WATERMELON***
GOURDS***	WATERCRESS***
HORSERADISH	WHEAT*
HUCKLEBERRY	YAMS
KALE	

\* Spot treatments may be applied in these crops.

\*\* Do not treat rice fields or levees when the fields contain flood water.

\*\*\* Apply only prior to planting. Allow at least 3 days between application and planting.

\*\*\*\* Do not feed or graze treated pineapple forage following application.

† Use is restricted to direct seeded crops only.

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 1/2 inch natural rainfall or by applying water via a sprinkler irrigation system.

**Spot Treatment** (Only those crops with "\*" can be spot treated.) - Applications in growing crops must be made prior to heading of small grains and milo, initial pod set in soybeans, silking of corn, boll opening on cotton.

For forage grasses and forage legumes see "Spot Treatment" in the "Pastures" section of "Cropping Systems" in this label.

For dilution and rates of application using boom or handheld equipment, see "Mixing, Additives and Application Instructions" and "Weeds Controlled" sections of this label.

NOTE: FOR FORAGE GRASSES AND FORAGE LEGUMES, NO MORE THAN ONE-TENTH OF ANY ACRE SHOULD BE TREATED AT ONE TIME. FOR ALL OTHER CROPS, 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.

**Selective Equipment** - This product may be applied through shielded applicators, or wiper applicators in cotton and soybeans. Shielded and wiper applicators may also be used in tree crops and grapes. Wiper applicators may be used in rutabagas, forage grasses and forage legumes, including pasture sites and sorghum milo.

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.

Allow at least the following time intervals between application and harvest:

Cotton, Soybeans.....7 days

Apples, Atemoya, Avacado, Carambola,  
 Cherry, Citrus, Grapes, Peas,  
 Sugar Apple, Rutabagas.....14 days  
 Stone fruit.....17 days  
 Nut Crops.....21 days  
 Sorghum (milo)\*.....40 days

\* Do not use roller applicators. Do not feed or graze treated milo fodder. Do not ensile treated vegetation.

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**BERRIES AND SMALL FRUITS**

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Apply as a preplant broadcast application, or as a directed spray or wiper application post-planting.

See "General Information" and "Mixing, Additives and Application Instructions" sections of this label for essential product performance information.

See the "Selective Equipment" part of the "Application Equipment and Techniques" section of this label for information on recommended use and calibration of this equipment.

For Wick or other Wiper Applicators - Prepare a 40 percent solution. Apply the solution to emerged weeds.

In severe infestations, reduce equipment ground speed to insure that adequate amounts of this product are wiped on the weeds. A second treatment in the opposite direction may be beneficial.

Do not permit herbicide solution to contact desirable vegetation, including green shoots, canes, or foliage.

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**PASTURES**

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Apply this product prior to planting forage grasses and legumes.

**Pasture or Hay Crop Renovation** - When applied as a broadcast spray this product controls the annual and perennial weeds listed in this label prior to planting forage grasses or legumes. Remove domestic livestock before application and wait 8 weeks after application before grazing or harvesting.

**Spot Treatment** - When applied as a spot treatment as recommended, this product controls annual and perennial weeds listed in this label which are growing in pastures, forage

grasses and forage legumes composed of bahiagrass, bermudagrass, bluegrass, brome, fescue, orchardgrass, ryegrass, timothy, wheatgrass, alfalfa or clover.

**Wiper Application** - When applied as directed this product controls or suppresses the weeds listed under "Wiper Applicators" in the "Selective Equipment" section of this label. For spot treatment and wiper application, 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. Further applications may be made in the same area at 30 day intervals. Remove domestic livestock before application and wait 14 days after application before grazing livestock or harvesting.

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### SUGARCANE

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When applied as directed for "Cropping Systems," under the condition described, this product controls those emerged annual and perennial weeds listed on this label growing in or around sugarcane or in fields to be planted to sugarcane. This product will also control undesirable sugarcane.

**NOTE:** Where repeat treatments are necessary, do not exceed a total of 18.7 quarts of this product per acre per year. Do not apply to vegetation in or around ditches, canals or ponds containing water to be used for irrigation.

**Broadcast Treatment** - Apply this product in 10 to 40 gallons of water per acre on emerged weeds growing in fields to be planted to sugarcane.

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

For removal of last stubble or ratoon cane, apply 7 to 9 quarts of this product in 10 to 40 gallons of water per acre to new growth having at least 7 or more new leaves. Allow 7 or more days after application before tillage.

**Spot Treatment in or Around Sugarcane Fields** - For dilution and rates of application using hand-held equipment, see "Mixing, Additives and Application Instructions" and "Weeds Controlled" sections of this label.

For control of volunteer or diseased sugarcane, make a 2 percent solution of this product in water and spray to wet the foliage of vegetation to be controlled.

**NOTE:** When spraying volunteer or diseased sugarcane, the plants should have at least 7 new leaves.

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

Do not feed or graze treated sugarcane forage following application.

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**TREE AND VINE CROPS**

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This product is recommended for weed control in established groves, vineyards, or orchards, or for site preparation prior to transplanting crops listed in this section. Applications may be made with boom equipment, CDA, shielded sprayers, hand-held and high-volume wands, lances, or orchard guns, or with wiper applicator equipment, except as directed in this section. See the "Application Equipment and Techniques" section of this label for specific information on use of equipment.

When applying this product alone, refer to the "Weeds Controlled" section for recommended rates to be used.

**NOTE**

Repeat treatments may be necessary to control weeds originating from underground parts of untreated weeds or from seeds. This product does not provide residual weed control. For subsequent weed control, follow a program using residual herbicides or use repeated applications of this product. Do not apply more than 18.7 quarts of this product per acre per year.

**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 OR VINES. CONTACT OF THIS PRODUCT WITH OTHER THAN MATURED BROWN BARK CAN RESULT IN SERIOUS CROP DAMAGE.**

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

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

For specific rates of applications and instructions, see the "Weeds Controlled" section of this label.

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**TANK MIXTURES  
TREE AND VINE CROPS**

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

**ROUNDUP® RAINFAST™ plus GOAL™ 1.6E**

**ROUNDUP RAINFAST plus KARDEX™ WP**

**ROUNDUP RAINFAST plus KROVAR™ I**

**ROUNDUP RAINFAST plus KROVAR™ II**

**ROUNDUP RAINFAST plus SIMAZINE,  
CALIBER™90**

**ROUNDUP RAINFAST plus SIMAZINE 4L**

**ROUNDUP RAINFAST plus SIMAZINE 80W**

**ROUNDUP RAINFAST plus SOLICAM™ 80WP**

**ROUNDUP RAINFAST plus SURFLAN™ AS**

**ROUNDUP RAINFAST plus SURFLAN™ 75W**

**ROUNDUP RAINFAST plus SIMAZINE  
(80W, OR 4L, OR CALIBER 90)  
plus SURFLAN (AS or 75W)**

**ROUNDUP RAINFAST plus GOAL (1.6E)  
plus SURFLAN (AS or 75W)**

**ROUNDUP RAINFAST plus GOAL™ (1.6E)  
plus SIMAZINE  
(80W, or 4L, or CALIBER 90)\***

**ROUNDUP RAINFAST plus GOAL™ (1.6E)  
plus SURFLAN (as OR 75W)  
plus simazine (80W, 4L,  
or Caliber 90)**

\*See the Roundup Rainfast plus Goal plus simazine tank mixture section below for specific use instructions.

When tank-mixing with residual herbicides, add an agriculturally approved nonionic surfactant.

Do not apply these tank mixtures in Puerto Rico.



<sup>TM</sup>Goal is a trademark of Rohm and Haas Company.  
<sup>TM</sup>Solicam is a trademark of Sandoz, Inc.  
<sup>TM</sup>Caliber is a trademark of Ciba-Geigy Corporation.  
<sup>TM</sup>Karmex and <sup>TM</sup>Krovar are trademarks of E.I. du Pont de Nemours and Company.  
<sup>TM</sup>Surflan is a trademark of Elanco Products Company.

**CONTROL OF EMERGED WEEDS**

**Annual Weeds** - Apply 56 ounces per acre of this product in these tank mixtures, when weeds are less than 12 inches tall. For weeds greater than 12 inches tall, apply 85 ounces per acre.

**Perennial Weeds** - For partial control of perennial weeds using these tank mixtures, apply 3-1/2 to 9 quarts per acre of this product. Follow the recommendations in the "Weeds Controlled" section of this label for stage of growth and rate of application for specific perennial weeds.

**PREEMERGENCE WEED CONTROL**

The following are the labeled rates for the recommended residual herbicides:

PRODUCT	RATE/ACRE
Goal 1.6E	1.25 to 5 qts.
Karmex WP	2 to 8 lbs.
Krovar I	2 to 8 lbs.
Krovar II	2 to 8 lbs.
Simazine, Caliber 90	1.1 to 10.6 lbs.
Simazine, 80W	1-1/4 to 12 lbs.
Simazine 4L	2 to 9.6 qts.
Solicam 80WP	2-1/2 to 5 lbs.
Surflan AS	2 to 4 qts.
Surflan 75W	2-2/3 to 5-1/3 lbs.

**NOTE:** These residual herbicides may provide postemergence activity on certain annual weed species.

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

Read and carefully observe the label claims, cautionary statements, rates and all other information on the labels of all products.

For specific rates of application and instructions see the "Weeds Controlled" section of this label.

**ROUNDUP® RAINFAST™ plus GOAL**

Roundup Rainfast alone and Roundup Rainfast plus Goal tank mixtures will control or suppress annual weeds listed below.

Apply the recommended rates in 3 to 20 gallons of water per acre. Apply when weeds are actively growing and less than 6 inches in height. If weeds are under drought stress, irrigate prior to application.

**RECOMMENDED RATES AND WEEDS CONTROLLED**

C = Control

S = Suppression

WEED SPECIES	ROUNDUP® (fl oz/acre)			ROUNDUP+Goal (fl oz/acre)
	14	21	28	28+ 4 to 16
Bluegrass, annual	C	C	C	C
Barley	C	C	C	C
Cheeseweed, common (3")	S	S	S	C
Rocket, London	S	S	C	C
Shepherdspurse	S	S	C	C
Chickweed	S	C	C	C
Fleabane, flaxleaf	S	C	C	C
Red Maids	S	C	C	C
Barnyardgrass	S	C	C	C
Cheeseweed, common (3-6")	S	S	S	C
Crabgrass	S	S	C	C
Groundsel, common	S	S	C	C
Junglerice	S	S	C	C
Lambsquarters	S	S	C	C
Marestail	S	S	C	C
Pigweed, redroot	S	S	C	C
Ryegrass, common	S	S	C	C
Sowthistle, annual	S	S	C	C
Purslane, common	S	S	C	C
Nettle, stinging	S	S	C	C
Filaree	S	S	S	S

**ROUNDUP® RAINFAST™ plus GOAL plus SIMAZINE  
(California only)**

Roundup Rainfast may be tank-mixed with Goal plus simazine for broad-spectrum postemergence and preemergence control. Refer to the following table for approved crops and rate ranges for each product in this tank mix. Refer to the individual product labels for weeds controlled, geographical restrictions, precautionary statements and specific use rates.

CROP	RATE RANGES*		
	ROUNDUP® (ounces)	+ GOAL 1.6E (quarts)	+ SIMAZINE 80W** (pounds)
Grapes	56 to 85	1.25 to 5	2.5 to 5
Almond	56 to 85	1.25 to 5	1.25 to 2.5

Use equivalent rate of Caliber 90 or simazine 4L

\* Rate dependent on weeds present.

\*\* Rate dependent on soil type and weeds present.

**ROUNDUP® RAINFAST™ plus GOAL plus SIMAZINE/SURFLAN**

This product plus Goal, applied alone or as a three-way or four-way tank-mix with simazine and/or Surflan, will provide postemergence control of those weeds listed below when applied as recommended.

Refer to individual product labels for preemergence rates, weeds controlled, precautionary statements and other important information.

Apply these tank mixtures in 3 to 40 gallons of water.

**WEEDS CONTROLLED**

Weed Species	Maximum Height (inches)	ROUNDUP® (ounces/acre)	+ Goal (quarts/acre)
Barley, wild	4	28 to 56	+ 0.5 to 5
Bluegrass, annual	4	28 to 56	+ 0.5 to 5
Cheeseweed, common	4	28 to 56	+ 0.5 to 5

Chickweed, common	4	28 to 56	+	0.5 to 5
Flaxleaf fleabane	4	28 to 56	+	0.5 to 5
Groundsel, common	4	28 to 56	+	0.5 to 5
Marestail	4	28 to 56	+	0.5 to 5
Pineappleweed	4	28 to 56	+	0.5 to 5
Rocket, London	4	28 to 56	+	0.5 to 5
Shepherdspurse	4	28 to 56	+	0.5 to 5
Sowthistle, annual	4	28 to 56	+	0.5 to 5
Cheeseweed, common	12	56 to 85	+	1 to 5
Nettle, stinging	12	56 to 85	+	1 to 5
Filaree	12	56 to 85	+	1 to 5

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**PERENNIAL GRASS SUPPRESSION  
GROVE MIDDLES**

When applied as directed this product will suppress vegetative growth as indicated below.

**Rahiagrass**

This product will provide significant inhibition of seedhead emergence and will suppress vegetative growth for a period of approximately 45 days with a single application and approximately 120 days with sequential applications. Apply this product 1 to 2 weeks after full green-up or after mowing to a uniform height of 3 to 4 inches. Applications must be made prior to seedhead emergence. Apply 10-1/2 fluid ounces of this product in 10 to 25 gallons of water per acre.

Sequential applications of this product plus nonionic surfactant may be made at approximately 45-day intervals to extend the period of seedhead and vegetative growth suppression. For continued seedhead suppression, sequential applications must be made prior to seedhead emergence. Apply no more than 2 sequential applications per year. As a first sequential application, apply 7 fluid ounces of this product plus nonionic surfactant. A second sequential application of 3-1/2 to 7 fluid ounces may be made approximately 45 days after the last application.

**Bermudagrass**

For burndown, apply 1-3/4 to 3-1/2 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. Adding 0.5 to 1 percent nonionic surfactant by total spray volume may enhance burndown.

Suppression only - Apply 10-1/2 to 28 fluid ounces in 3 to 20 gallons of water per acre no sooner than 1 to 2 weeks after full green-up. Mowing prior to application may occur provided a minimum height of 3 inches is maintained. Rates of 10-1/2 to 18 fluid ounces should be used in shaded conditions or where a lesser degree of suppression is desired. Sequential applications may be made when regrowth occurs and bermudagrass injury and stand reduction can be tolerated. Adding 0.5 to 1 percent nonionic surfactant by total spray volume may enhance burndown.

**LOW VOLUME APPLICATION  
(FLORIDA AND TEXAS)**

For burndown or control of listed perennial weeds, apply the recommended rates of this product in 3 to 20 gallons of water per acre. Where weed foliage is dense, use 10 to 20 gallons of water per acre. Adding 0.5 to 1 percent nonionic surfactant by total spray volume may enhance burndown.

Apply when weeds are actively growing and at the growth stages listed in the "Perennial Weeds Controlled" section of this label. If perennial weeds are mowed, allow weeds to regrow to the recommended stage of growth.

S = Suppression  
PC = Partial Copntrol

B - Burndown  
C - Control

WEED SPECIES	RATE PER ACRE			
	1-3/4 QT	3-1/2 QT	5-1/3 QT	9 QT
Bermudagraass	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

**TREE CROPS**

Citrus\*: citron, grapefruit, kumquat, lemon, lime, orange, tangelo, tangerine.

Nuts\*\*: almond, filbert, macadamia, pecan, pistachio, walnut.

Pome Fruit\*: apple, pear.

**Stone Fruit\*\*:** apricots, cherries, nectarines, olives, peaches, plums/prunes.

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

For citron and olives, apply as a 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.

**TROPICAL FRUIT:** acerola, atemoya\*, avocado\*, banana (plantains), carambola\*, coffee\*\*\*\*, figs\*, guava, mango\*, papaya, sugar apples\*, tea. Allow minimum of 1 day between last application and harvest of guava and papaya. In coffee and banana, delay applications 3 months after transplanting to allow the new coffee or banana plant to become established.

**NOTE:**

- \* Allow a minimum of 14 days between last application and harvest.
- \*\* Allow a minimum of 17 days between last application and harvest of these crops.
- \*\*\* Allow a minimum of 21 days between last application and harvest.
- \*\*\*\* Allow a minimum of 28 days between last application and harvest.

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**VINE CROPS**

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**Kiwi Fruit\***

**Grapes\*** Any variety of table, wine, or raisin grape may be treated with any equipment listed in this section.

In the northeast and Great Lakes regions, applications must be made prior to the end of bloom stage of grapes to avoid injury.

- \* Applications should not be made when green shoots, canes, or foliage are in the spray zone.
- \* Allow a minimum of 14 days between last application and harvest.

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U.S. Pat. No. 3, 799, 758 and  
U.S. Pat No, 4, 405, 531.  
Other patents pending.

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