

## **SOYBEANS (SELECTIVE EQUIPMENT) - ANNUAL WEEDS**

### General Information

#### PRODUCT INFORMATION

**Product Description:** This product is a postemergence, systemic herbicide with no soil residual activity. It is generally non-selective and gives broad-spectrum control of many annual and perennial weeds, woody brush, trees and vines. It is formulated as a water-soluble liquid containing surfactant and may be applied using standard and specialized pesticide application equipment after dilution and thorough mixing with water or other carrier according to label directions.

Do not add surfactants, additives containing surfactants, buffering agents or pH adjusting agents to the spray solution when Roundup PowerMAX II Herbicide is the only pesticide being applied unless otherwise directed.

See the "MIXING" section of this label for instructions regarding other additives.

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

**No Soil Activity:** This product binds tightly to soil particles and does not provide residual weed control. Weeds must be emerged at the time of application to be controlled by foliar application of this product. Weed seeds in the soil will not be affected by this product and will continue to germinate. Unattached plant rhizomes and rootstocks beneath the soil surface will also not be affected by this product.

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

**Stage of Weeds:** Annual weeds are easiest to control when they are small. Enhanced control of most perennial weeds is obtained when this product is applied at late growth stages approaching maturity. Refer to the "ANNUAL WEEDS RATE SECTION," "PERENNIAL WEEDS RATE SECTION" and "WOODY BRUSH, TREES AND VINES RATE SECTION" for more information on the control of specific weeds.

**Cultural Considerations:** Reduced weed control could result when this product is

applied to annual or perennial weeds that have been mowed, grazed or cut, and have not been allowed to re-grow prior to application. Always use a higher product application rate within the given range when weed growth is heavy or dense, or when weeds are growing in an undisturbed (non-cultivated) area. Reduced weed control could also result when this product is applied to weeds that show signs of disease or insect damage, are covered with dust, or are surviving under poor growing conditions.

**Spray Coverage:** For enhanced results, spray coverage must be uniform and complete. Do not spray foliage to the point of runoff.

**Rainfastness:** Rainfall within 4 hours of application could wash this product off of the foliage and a second application might then be needed for acceptable weed control. Refer to specific use sections of this label for additional information on the minimum intervals required before re-application of this product.

**Time to Symptoms:** This product moves through the plant from the point of foliage contact to and into the root system. Visible effects are a gradual wilting and yellowing of the plant that advances to complete browning of aboveground growth and deterioration of underground plant parts. Effects are visible on most annual weeds within 2 to 4 days, but on most perennial weeds, effects might not be visible for 7 or more days after application. Extremely cool or cloudy weather following application could slow activity of this product and delay development of visual symptoms.

**Maximum Application Rates:** The maximum application or use rates stated throughout this label are given in units of volume (fluid ounces or quarts) of this product per acre. However, the maximum allowable application rates apply to this product combined with the use of any and all other herbicides containing the active ingredient glyphosate, whether applied separately or in a tank mixture, on a basis of total pounds of glyphosate (acid equivalents) per acre. If more than one glyphosate-containing product is applied to the same site within the same year, you must ensure that the total use of glyphosate (pounds acid equivalents) does not exceed the maximum allowed. See the "INGREDIENTS" section of this label for necessary product information.

Unless otherwise specified on this label, the combined total application of this product on a site must not exceed 5.3 quarts (6 pounds of glyphosate acid) per acre

per year. For applications on non-crop sites, or on tree, vine or shrub crop production sites, the combined total application of this product must not exceed 7 quarts (8 pounds of glyphosate acid) per acre per year.

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

## WEED RESISTANCE MANAGEMENT

Glyphosate, the active ingredient in this product, is a Group 9 herbicide based on the mechanism of action classification system of the Weed Science Society of America. Any weed population can contain plants that are naturally resistant to Group 9 herbicides. Weeds resistant to Group 9 herbicides can be effectively managed by using another herbicide from a different Group (either alone or in a mixture according to label directions), by using other cultural or mechanical methods of weed control, or a combination of the two. Consult your local company representative, state cooperative extension agent, professional consultant or other qualified authority to determine appropriate actions for controlling specific resistant weeds.

### Weed Management Practices

Resistant populations arise when rare individual plants are uncontrolled by a normal dose of a given herbicide under normal environmental conditions. In the absence of other control measures these individuals survive, produce seed, and eventually become the dominant biotype in the field through continuous selection. The best means of reducing this selection is to use diverse weed control practices such as multiple herbicides with different mechanisms of action, and often in combination with various mechanical and cultural practices. To minimize the occurrence of herbicide-resistant biotypes, including those resistant to glyphosate, implement the following weed management practice options that are practical to your situation. These management practices are applicable to reduce the spread of confirmed resistant biotypes (managing existing resistant biotypes) and to reduce the potential for selecting for resistance in new species (proactive resistance management).

- Use a diversified approach toward weed management focused on preventing weed seed production and reducing the number of weed seeds in the soil.
- Plant crops into fields that are as weed-free as possible and then keep them as

weed-free as possible.

- Plant crop seed that is as weed-free as possible.
- Scout fields routinely, before and after herbicide application.
- Use multiple herbicide mechanisms of action that are effective against the most troublesome weeds in your field and against those with known resistance.
- Apply herbicides at application rates listed on the label when weeds are within the size range indicated on the label.
- Emphasize cultural practices that suppress weeds by using crop competitiveness.
- Use mechanical and biological weed management practices where appropriate.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- Manage weed seed at harvest and after harvest to prevent a buildup of the weed seedbank.

### Management of Glyphosate-Resistant Biotypes

Appropriate testing is needed to determine if a weed is resistant to glyphosate. Call 1-800-ROUNDUP (1-800-768-6387) or contact your Monsanto Company representative to determine if resistance in any particular weed biotype has been confirmed in your area, or visit on the Internet at

[www.weedresistancemanagement.com](http://www.weedresistancemanagement.com) or [www.weedscience.org](http://www.weedscience.org). Glyphosate-resistant weeds can be controlled or managed by applying this product in combination with residual preemergence herbicides and/or other postemergence herbicides labeled for control of the targeted weed in the crop being grown. For more information, see the "ANNUAL WEEDS RATE SECTION" and "PERENNIAL WEEDS RATE SECTION" of this label.

Since the occurrence of resistant weeds is difficult to detect prior to use, Monsanto Company accepts no liability for any losses that result from the failure of this product to control resistant weeds.

### MIXING

Spray solutions of this product may be mixed, stored and applied using clean stainless steel, fiberglass, plastic or plastic-lined steel containers. DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. Eliminate any risk of siphoning the contents of the tank back into the carrier source while mixing. Use approved anti-back-siphoning devices where

required by State or local regulations. A 50-mesh nozzle screen or line strainer on the spray equipment is adequate. Clean sprayer parts promptly after using this product by thoroughly flushing with water.

### Mixing with Water

PERFORMANCE OF THIS PRODUCT CAN BE SIGNIFICANTLY REDUCED IF WATER CONTAINING SOIL SEDIMENT IS USED AS CARRIER. DO NOT MIX THIS PRODUCT WITH WATER FROM PONDS OR DITCHES THAT IS VISIBLY MUDDY OR MURKY. This product mixes readily with water. Mix spray solutions of this product as follows. Begin filling the mixing tank or spray tank with clean water. Add the required amount of this product near the end of the filling process and mix gently. Foaming of the spray solution can occur during mixing. To prevent or minimize foaming, mix gently, terminate bypass and return lines at the bottom of the tank, and, if necessary, add an appropriate anti-foam or defoaming agent to the spray solution.

### Surfactants

Although not always required, surfactant may be added to spray solutions of this product. However, additional surfactant can increase the performance of this product at water carrier volumes above 30 gallons per acre or at application rates below 16 fluid ounces of product per acre.

Nonionic surfactants that are labeled for use with herbicides may be used. Do not reduce rates of this product when adding surfactant. Use a surfactant concentration of 0.25 to 0.5 percent (1 to 2 quarts per 100 gallons of spray solution) when adding surfactant that contains at least 70 percent active ingredient, or a 1-percent surfactant concentration (4 quarts per 100 gallons of spray solution) when adding surfactant that contains less than 70 percent active ingredient. Read and carefully observe all precautionary statements and other information on the surfactant label.

DO NOT add buffering agents or pH adjusting agents to the spray solution when Roundup PowerMAX II Herbicide is the only pesticide product being applied.

DO NOT ADD ADDITIONAL SURFACTANT OR ADDITIVES CONTAINING SURFACTANT TO THIS PRODUCT FOR PREHARVEST APPLICATION TO COTTON OR ANY POSTEMERGENCE (IN-CROP) APPLICATION TO ROUNDUP READY COTTON AND ROUNDUP READY FLEX COTTON.

## Ammonium Sulfate

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

When using ammonium sulfate, apply this product at rates directed on this label; lower application rates will result in reduced performance.

## Colorants and Dyes

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

## Drift Reduction Additives

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

## APPLICATION EQUIPMENT AND TECHNIQUES

This product may be applied with the following application equipment:

**Aerial Application Equipment**—Fixed-wing and helicopter

**Ground Application Equipment**—Boom or boomless systems, pull-type sprayers, floaters, pick-up sprayers, spray coupes and other ground broadcast application equipment

**Handheld Sprayers**—Backpack sprayers, pump-up pressure sprayers, handguns, handwands, mistblowers\*, lances and other handheld and motorized spray

equipment used to direct the spray onto weed foliage

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

Selective Application Equipment—Shielded and hooded sprayers, wiper applicator, sponge bar Injection Systems—Aerial or ground injection sprayers

Controlled Droplet Applicator (CDA)—Handheld or boom-mounted applicators that produce a spray consisting of a narrow range of droplet sizes

**APPLY THIS PRODUCT USING PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF ACCURATELY DELIVERING DESIRED VOLUMES.**

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

#### Aerial Application Equipment

Unless otherwise prohibited, all applications of this product described on this label may be made using aerial application equipment where appropriate, provided that the applicator complies with the precautions and restrictions specified on this label or on separate supplemental labeling published for this product.

**DO NOT APPLY THIS PRODUCT USING AERIAL APPLICATION EQUIPMENT EXCEPT UNDER CONDITIONS SPECIFIED ON THIS LABEL OR ON SEPARATELY PUBLISHED SUPPLEMENTAL LABELING FOR THIS PRODUCT.**

**FOR SPECIFIC USE INSTRUCTIONS, RESTRICTIONS AND REQUIREMENTS RELATED TO THE AERIAL APPLICATION OF THIS PRODUCT IN ARKANSAS AND CALIFORNIA, OR SPECIFIC COUNTIES THEREIN, REFER TO THE LIMITATIONS ON AERIAL APPLICATION IN THAT STATE OR COUNTY PRESENTED IN THIS SECTION.**

Unless otherwise directed, the maximum single application rate of this product is 44 fluid ounces per acre when using aerial application equipment. Apply this product at the appropriate rate in 3 to 15 gallons of water per acre unless otherwise directed on this label or on separate supplemental labeling for this product. Refer to the individual use sections of this label for application rates, spray volumes and additional directions for use.

Drift control reduction additives may be used.

Ensure uniform application. To avoid streaked, uneven or overlapped application,

use appropriate marking devices.

## Aircraft Maintenance

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills.

PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES COULD RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR IS MOST SUSCEPTIBLE. The maintenance of an organic coating (paint) that meets aerospace specification MIL-C-38413 can help prevent corrosion.

## State Specific Limitations on Aerial Application

### LIMITATIONS ON AERIAL APPLICATION IN CALIFORNIA ONLY

DO NOT apply this product using aerial application equipment in residential areas.

AVOID DRIFT - DO NOT APPLY WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITION THAT FAVORS DRIFT. DRIFT OF THIS PRODUCT ONTO ANY VEGETATION TO WHICH APPLICATION WAS NOT INTENDED CAN CAUSE DAMAGE. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, USE PROPER AERIAL APPLICATION EQUIPMENT FITTED WITH APPROPRIATE NOZZLES AND MAINTAIN ADEQUATE BUFFERS.

Follow the directions below when making an aerial application near non-target crops, desirable annual vegetation, or desirable perennial vegetation after bud break and before total leaf drop.

1. Do not apply this product within 100 feet of all desirable vegetation or non-target crops.
2. If winds are blowing up to 5 miles per hour TOWARD desirable vegetation or non-target crops, do not apply this product within 500 feet of the desirable vegetation or crops.
3. If winds are blowing between 5 and 10 miles per hour TOWARD desirable vegetation or non-target crops, a buffer zone greater than 500 feet might be needed to protect the desirable vegetation or crops.
4. Do not apply this product using aerial application equipment when winds are blowing in excess of 10 miles per hour.
5. Do not apply this product using aerial application equipment when inversion conditions exist.

When tank-mixing this product with 2,4-D, only 2,4-D amine formulations may be applied in California using aerial application equipment. Tank mixtures of this product with 2,4-D amine formulations may be applied by air in California on fallow fields and in reduced tillage systems, and for alfalfa and pasture renovation applications only.

This product, when tank-mixed with dicamba, may not be applied by air in California.

#### ADDITIONAL LIMITATIONS ON AERIAL APPLICATION

#### IN FRESNO COUNTY, CALIFORNIA ONLY

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

The following information applies only from February 15 through March 31 within the following boundaries of Fresno County, California:

North: Fresno County line

South: Fresno County line

East: State Highway 99

West: Fresno County line

Observe the following directions to minimize off-site movement during aerial application of this product.

Minimization of off-site movement is the responsibility of the grower, Pest Control Advisor and aerial applicator.

#### Written Directions

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

#### Aerial Applicator Training and Equipment

Aerial application of this product is limited to pilots who have successfully completed a Fresno County Agricultural Commissioner and California Department of Pesticide Regulation approved training program for aerial application of herbicides. All aircraft must be inspected, critiqued in flight and certified at a Fresno County Agricultural Commissioner approved fly-in. Test and calibrate spray equipment at intervals sufficient to insure that proper rates of herbicides and adjuvants are being applied during commercial use. Applicator must document such calibrations and testing. Demonstration of performance at Fresno County Agricultural Commissioner approved fly-ins constitutes such documentation, or other written records showing calculations and measurements of flight and spray parameters acceptable to the Fresno County Agricultural Commissioner.

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

For additional information on the proper aerial application of this product in Fresno County, call (800)332-3111.

#### LIMITATIONS ON AERIAL APPLICATION IN ARKANSAS ONLY

AVOID DRIFT. DO NOT APPLY INTO STILL AIR WHERE THERE IS A TEMPERATURE INVERSION LAYER LOW ENOUGH FOR FINE SPRAY PARTICLES TO BECOME SUSPENDED AND MOVE OUTSIDE THE TARGET AREA WHEN THE INVERSION LAYER

MOVES. DO NOT APPLY WHEN WINDS ARE GUSTY OR UNDER ANY OTHER CONDITION THAT FAVORS DRIFT. DRIFT IS LIKELY TO CAUSE DAMAGE TO ANY VEGETATION CONTACTED. TO PREVENT INJURY TO ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Apply this product at the appropriate rate in 3 to 15 gallons of water per acre.

Use sufficient carrier volume and appropriate equipment set-up to form droplets large enough to avoid drift potential.

Coarse droplets in the 300 to 500 (VMD) micron range have a lower drift potential.

Applications are typically to be made with the nozzle release point at 8 to 15 feet above the top of the target plants unless a greater height is required for aircraft safety.

The distance of the outermost nozzles on the boom must not exceed 75 percent of the length of the wingspan or rotor. In many cases, reducing this distance to 65 percent of the length of the wingspan or rotor will improve drift control without affecting the swath width.

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

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

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

Follow the directions below when an aerial application is made near non-target crops or other desirable vegetation:

1. Do not apply this product within 100 feet of non-target crops or any desirable vegetation.
2. If winds are blowing up to 5 miles per hour TOWARD non-target crops or desirable vegetation, do not apply this product within 500 feet upwind of the crop or desirable vegetation.
3. If winds are blowing between 5 and 10 miles per hour TOWARD non-target crops

or desirable vegetation, a buffer zone greater than 500 feet might be needed to protect the crop or desirable vegetation.

#### Ground Application Equipment

Apply this product at the appropriate rate as specified on this label in 3 to 40 gallons of water per acre when making a broadcast application using ground application equipment, unless otherwise directed on this label or on separate supplemental labeling or Fact Sheets published for this product. As the weed density increases, increase the spray volume towards the upper end of this range to ensure complete coverage. Use nozzles that will avoid generating a fine mist. For enhanced results with ground application equipment, use flat-fan nozzles. Check spray pattern for uniform distribution of spray droplets.

#### Handheld Sprayers

When using a handheld sprayer, apply spray solutions of this product uniformly and completely to the foliage of target weeds using a coarse droplet spectrum and a spray-to-wet technique; do not spray to the point of runoff. For the appropriate concentration of this product in the spray solution and timing of application to control specific weeds, woody brush, trees and vines, refer to the "ANNUAL WEEDS RATE SECTION," "PERENNIAL WEEDS RATE SECTION" and "WOODY BRUSH, TREES AND VINES RATE SECTION" of this label.

Spot treatment application of this product for weed control in a cropping system using a handheld sprayer may be made only when specifically directed on this label or on separate supplemental labeling for this product.

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

#### Selective Application Equipment

Selective application equipment allows this product to be applied to weeds growing near the crop or other desirable vegetation without killing the desirable vegetation. Selective application equipment must be capable of preventing all contact of the herbicide solution with the crop or other desirable vegetation and operated without spray mist escape, leakage, or dripping of the herbicide solution.

**AVOID CONTACT OF THIS HERBICIDE WITH DESIRABLE VEGETATION.** Contact of this product with desirable vegetation could result in unwanted plant damage or

destruction. To the extent consistent with applicable law, such damage shall be the sole responsibility of the applicator.

### Shielded and Hooded Sprayers

A shielded sprayer directs the herbicide solution to the target weeds while protecting the crop or other desirable vegetation from being contacted by the herbicide spray with an impervious material or shield. Use nozzles that provide uniform coverage within the application area. Keep shields properly adjusted to protect desirable vegetation.

A hooded sprayer is a type of shielded sprayer where the spray pattern is fully enclosed, including the top, sides, front and back, thereby shielding the crop or other desirable vegetation from the spray solution.

This product may be diluted in water and applied using a shielded or hooded sprayer to weeds listed on this label growing on any non-crop site described on this label and in between rows of plants (row middles) in any cropping system listed on this label.

Properly adjust the hood to protect desirable vegetation. Ensure that the hood is capable of completely enclosing the spray pattern. If necessary when applying around crops grown on raised beds, extend the front and rear flaps of the hooded sprayer downward to reach the ground in deep furrows.

A hooded sprayer must be configured and operated in a manner that minimizes bouncing and avoids raising the hood up off the ground surface at any time. If the hood is raised, spray particles can escape and come into contact with the crop, causing damage to or destruction of the crop or other desirable vegetation. Avoid operating this equipment on rough or sloping terrain where the spray hood is likely to rise up off the ground surface.

Use hoods designed to minimize excessive dripping or runoff down the inside of the hood, such as a single, low pressure, low-drift, flat-fan nozzle with an 80- to 95-degree spray angle positioned at the top center of the hood, with a spray volume of 20 to 30 gallons per acre.

The following procedures will help reduce the potential for crop injury when using a hooded sprayer:

- Operate the sprayer with the hood on the ground or skimming across the ground surface.
- Leave at least an 8-inch untreated strip over the drill row. (For example, if the crop row width is 38 inches, make the maximum width of the spray hood 30 inches.)
- Operate at a ground speed of no greater than 5 miles per hour to minimize bouncing of the hooded sprayer.
- Apply when wind speed is 10 miles per hour or less.
- Use low-drift nozzles that provide uniform coverage within the application area.

Injury to a crop or other desirable vegetation can occur when application is made to foliage of weeds that come into direct contact with the crop or desirable vegetation. Do not apply this product when leaves of desirable vegetation are growing in direct contact with weeds. Droplets, mist, foam or splatter of the herbicide solution settling onto desirable vegetation can result in discoloration, stunting or destruction.

### Wiper Applicator

A wiper applicator is a device that physically wipes this product or solutions of this product directly onto the target weed or cut stump. Any handheld device that is capable of physically wiping this product or solutions of this product directly onto the target weed or cut stump, such as a paint brush, may be used.

A mechanical wiper applicator, such as a rope wick or sponge bar that can be driven through a field over the top of a crop or other desirable vegetation to control weeds that are taller than the desirable vegetation, must be designed, maintained and operated to prevent the herbicide solution from contacting desirable vegetation.

Wiper applicators may be used over the top of food or feed crops ONLY if specifically permitted for use over that crop by this label or by separately published supplemental labeling for this product.

When using a mechanical wiper applicator, adjust the height of the applicator to ensure adequate contact with weeds and so that the wiper contact point is a minimum of 2 inches above the desirable vegetation. Enhanced results can be obtained when more of the weed is exposed to the herbicide solution and weeds are a minimum of 6 inches above the desirable vegetation. Weeds that do not come into contact with the herbicide solution will not be affected. Poor contact can occur when weeds are growing in dense clumps, when operating in an area of severe weed infestation, or when weed height varies dramatically. In these situations, more

than one application of this product might be necessary.

Operate wiper applicators at a ground speed of no greater than 5 miles per hour. Performance in areas of heavy weed infestation can be improved by reducing speed, which will provide more time for re-saturation of the wiper with the herbicide solution and more contact time of the wiper with the weed. Enhanced results with a wiper applicator can be obtained when two applications are made traveling in opposite directions in the field.

Keep wiper surfaces clean.

Droplets, mist, foam or splatter of the herbicide solution settling onto desirable vegetation can result in discoloration, stunting or destruction. Avoid leakage or dripping onto desirable vegetation. Be aware that on sloping ground the herbicide solution can migrate to one side, causing dripping on the lower end and drying of the wiper on the upper end of the applicator.

Do not apply this product using a wiper applicator when weeds are wet.

Do not add surfactant to the herbicide solution when using a wiper applicator.

For Rope and Sponge Wick Applicators-use solutions ranging from 33 to 75 percent of this product in water.

For Panel Applicators-use solutions ranging from 33 to 100 percent (undiluted) of this product in water.

Mix only the amount of this product that will be used during a 1-day period, as reduced product performance can result from the use of solutions held in storage.

Clean wiper parts promptly after using this product by thoroughly flushing with water.

## Injection Systems

This product may be used in aerial and ground injection spray systems as a liquid concentrate or diluted prior to injecting into the spray stream. Do not mix this concentrated product with the undiluted concentrate of other products for use in injection systems, unless otherwise directed.

## Controlled Droplet Applicator (CDA)

The amount of this product applied per acre using a controlled droplet applicator (CDA) must be no less than the rate specified on this label for application using conventional broadcast application equipment.

A controlled droplet applicator produces a spray pattern that is not easily visible. Use extreme care to avoid spray or drift from contacting the foliage or any other green tissue of desirable vegetation, as plant damage or destruction could result.

## ANNUAL AND PERENNIAL CROPS

THIS SECTION PROVIDES DIRECTIONS FOR USE OF THIS PRODUCT THAT APPLY TO ALL CROPS LISTED IN THE FOLLOWING SECTIONS. SEE THE INDIVIDUAL CROP SECTIONS FOR SPECIFIC USE INSTRUCTIONS, PREHARVEST INTERVALS, AND ADDITIONAL PRECAUTIONS AND RESTRICTIONS.

See the "ROUNDUP READY CROPS" section of this label or separately published supplemental labeling for this product for directions for use in Roundup Ready crops.

**USE INSTRUCTIONS:** This product may be applied during fallow intervals preceding planting, prior to planting or transplanting, at-planting, or preemergence to annual and perennial crops listed on this label, except where specifically limited. For any crop not listed on this label, application must be made a minimum of 30 days prior to planting. Unless otherwise directed, apply this product according to the rates listed in the "ANNUAL WEEDS RATE SECTION," "PERENNIAL WEEDS RATE SECTION" and "WOODY BRUSH, TREES AND VINES RATE SECTION" of this label. Application rates specified on this label for hard-to-control weeds, or those specified on separate supplemental labeling for this product, supersede the rates in the "ANNUAL WEEDS RATE SECTION," "PERENNIAL WEEDS RATE SECTION" and "WOODY BRUSH, TREES AND VINES RATE SECTION" of this label.

Additional information on hard-to-control weeds can be found on Fact Sheets published for this product.

Application of this product may be repeated as needed up to a maximum of 5.3 quarts per acre per year. Refer to specific use sections of this label for additional information on minimum intervals required before re-application of this product.

Hooded sprayers and wiper applicators capable of preventing all contact of the herbicide solution with the crop may be used in mulched or unmulched row middles after crop establishment. Wiper applicators may be used over the top of crops to control tall weeds only when specifically directed in the individual crop sections that follow. Crop injury is possible with these methods of application. Refer to the “APPLICATION EQUIPMENT AND TECHNIQUES” section of this label for information regarding the potential for crop injury using selective application equipment.

Spot treatment application of this product for weed control in a cropping system may be made only when specifically directed in the individual crop sections that follow.

Unless otherwise prohibited, all applications of this product described in the sections that follow may be made using aerial application equipment where appropriate, provided that the applicator complies with the precautions and restrictions specified on this label and on all supplemental labeling published for this product. Refer to the “APPLICATION EQUIPMENT AND TECHNIQUES” section of this label for information on aerial application and procedures for avoiding spray drift that could cause injury to any vegetation not intended for application. Use of appropriate buffers will help prevent injury to adjacent vegetation.

**TANK MIXTURES:** This product may be tank-mixed with other herbicides to provide residual weed control, a broader weed control spectrum or an alternate mechanism of action. Always read and follow label directions for all products in the tank mixture. Use all products according to rates and timing specified on the label. Some tank-mix products have the potential to cause crop injury. Read the label of all products in the tank mixture prior to use to determine the potential for crop injury. Always predetermine the compatibility of tank-mix products together in the carrier by mixing small proportional quantities in advance. Mixing other products with this herbicide in the spray tank can cause incompatibility, antagonism, or a reduction in the efficacy of this product. Monsanto Company has not tested all product formulations for compatibility or performance in a tank-mix with this product. To the extent consistent with applicable law, buyer and all users are responsible for any and all loss or damage in connection with the use or handling of mixtures of this product with herbicides or other materials that are not specifically identified on this label or on separate supplemental labeling or Fact Sheets for this product. See the “MIXING” section of this label for more information on tank mixtures.

**PRECAUTIONS:** Avoid contact of this herbicide with foliage, green shoots or stems, bark, exposed roots (including those emerging from plastic mulch), or fruit of crops, as severe crop injury or destruction could result. Transplant seedlings coming into contact with weeds that are still wet with a spray solution of this product could result in significant crop injury. When making preemergence applications, application must be made before crop emergence to avoid severe crop injury. Broadcast application of this product at emergence will result in injury or death of emerged seedlings. Apply before seed germination in coarse sandy soils to further minimize the risk of crop injury. In crops where spot treatment is allowed, the crop sprayed with this product will be killed along with the weeds. Take care not to spray or allow spray to drift outside the target area in order to avoid unwanted crop destruction. See the “APPLICATION EQUIPMENT AND TECHNIQUES” section of this label for additional information.

Preharvest application on crops grown for seed could result in a reduction in germination or vigor. To the extent consistent with applicable law, buyer and all users are responsible for any and all loss or damage in connection with the preharvest use of this product on any crop grown for seed.

**RESTRICTIONS:** Observe the maximum application rates stated throughout this

label. Maximum application rates apply to the use of this product combined with the use of any and all other herbicides containing glyphosate as the active ingredient, whether applied separately or as mixtures. Calculate the application rates (glyphosate acid equivalents) and ensure that the total use of this and other glyphosate-containing products does not exceed the stated maximum rate. See the "PRODUCT INFORMATION" section of this label for more information on Maximum Application Rates.

Unless otherwise directed on this label, application using selective equipment, including wiper applicators and hooded sprayers, must be made a minimum of 14 days prior to harvest. In crops where spot treatment is allowed, do not apply this product to more than 10 percent of the total field to be harvested, unless otherwise directed.

Post-harvest and fallow applications must be made a minimum of 30 days prior to the planting of any crop not listed on this label.

Do not harvest or feed vegetation from an area for 8 weeks following broadcast postemergence application, unless otherwise directed.

When applying this product as a tank mixture with one or more products, refer to each individual tank-mix product label for restrictions and apply the mixture in accordance with the most restrictive statements for each product in the tank.

#### ROUNDUP READY CROPS

ROUNDUP READY CROPS CONTAIN A PATENTED GENE THAT PROVIDES TOLERANCE TO GLYPHOSATE, THE ACTIVE INGREDIENT IN THIS PRODUCT. THIS PRODUCT WILL CAUSE SEVERE CROP INJURY OR DESTRUCTION AND YIELD LOSS IF APPLIED TO CROPS THAT ARE NOT GLYPHOSATE TOLERANT. AVOID CONTACT OF THIS PRODUCT WITH FOLIAGE, GREEN STEMS, OR FRUIT OF CROPS, OR ANY DESIRABLE PLANTS THAT DO NOT CONTAIN A GLYPHOSATE-TOLERANCE GENE, AS SEVERE PLANT INJURY OR DESTRUCTION WILL RESULT.

Information on Roundup Ready crops can be obtained from your seed supplier or Monsanto Company representative. Roundup Ready crops must be purchased from an authorized licensed seed supplier.

The directions for use in the sections that follow, or those published separately on

supplemental labeling for this product, include all applications of this product that may be made onto a specified Roundup Ready crop during the complete cropping season. DO NOT combine these directions for use with the directions for use with the same crops listed in the “ANNUAL AND PERENNIAL CROPS” and “PASTURE GRASSES, FORAGE LEGUMES AND RANGELAND” sections of this label, which are intended for crops that do not contain a glyphosate-tolerance gene.

NOTE: Roundup Ready seed and the method of selectively controlling weeds in a Roundup Ready crop are protected under several U.S. Patents, including 5,352,605 and 5,633,435. A license to use Roundup Ready seed must be obtained prior to planting. Monsanto Company retains ownership of the gene and process technologies, and the Purchaser of the seed receives the right to use the licensed genes and technologies subject to the limited use license conditions. Seed containing a Roundup Ready trait cannot be used for research and demonstration, reverse engineering or in connection with herbicide registration. Progeny seed containing a Roundup Ready trait may not be saved for replanting or transferred to others for replanting.

Contact your Authorized Monsanto Retailer for information on obtaining a limited use license.

USE INSTRUCTIONS: Refer to the “ANNUAL WEEDS RATE SECTION” and “PERENNIAL WEEDS RATE SECTION” of this label for application rates for specific weeds. When applied as directed, this product will control the annual and perennial grasses and broadleaf weeds listed. Observe the maximum application rates and crop stage timings specified for individual Roundup Ready crops in the sections that follow.

Sprayer Preparation: It is important that sprayer and mixing equipment be clean and free of pesticide residue before being used to apply this product over the top of Roundup Ready crops. Follow the cleaning procedures specified on the label of the product(s) previously used. THOROUGHLY CLEAN THE SPRAY TANK AND ALL LINES AND FILTERS TO ELIMINATE POTENTIAL CONTAMINATION FROM OTHER HERBICIDES PRIOR TO MIXING AND APPLYING THIS PRODUCT.

ATTENTION: AVOID DRIFT. USE EXTREME CARE WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS THAT DO NOT CONTAIN A GLYPHOSATE-TOLERANCE GENE.

Ground broadcast application - Apply this product in 5 to 20 gallons of spray

solution per acre, unless otherwise directed. Select proper nozzles and spray pressure settings to avoid spraying a fine mist. For enhanced results with ground application equipment, use flat-fan nozzles. Check for even distribution of spray droplets.

Aerial application – Unless otherwise prohibited, all applications of this product described in this section may be made using aerial application equipment, where appropriate, provided that the applicator complies with the precautions and restrictions specified on this label and on all supplemental labeling published separately for this product. Apply this product in 3 to 15 gallons of water per acre. See the “APPLICATION EQUIPMENT AND TECHNIQUES” section of this label for important information on aerial application and procedures for avoiding spray drift that could cause injury to any vegetation not intended for application. Use of appropriate buffer zones will help prevent injury to adjacent vegetation.

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

**TANK MIXTURES:** Tank mixtures of this product with other herbicides, insecticides, fungicides, micronutrients or foliar fertilizers could result in reduced weed control or crop injury when applied over the top of Roundup Ready crops. Read the label of all products used in the tank mixture prior to use to determine the potential for crop injury. Always read and follow label directions for all products in the tank mixture. Use all products according to rates and timing specified on the product label. Always predetermine the compatibility of tank-mix products together in the carrier by mixing small proportional quantities in advance. Monsanto Company has not tested this product with all tank-mix product formulations for compatibility, antagonism or performance. To the extent consistent with applicable law, buyer and all users are responsible for any and all loss or damage in connection with the use or handling of mixtures of this product with herbicides or other materials that are not specifically listed on this label or on separate supplemental labeling or Fact Sheets for this product. See the “MIXING” section of this label for more information on tank mixtures.

Unless otherwise directed, nonionic surfactant may be added to the spray solution for application to Roundup Ready crops. The addition of certain surfactants to a spray solution of this product could result in some crop response including leaf speckling or leaf necrosis due to the surfactant. Refer to the individual Roundup

Ready crop sections that follow, or to separate supplemental labeling, for additional precautions or restrictions on the use of surfactants. Refer to the “MIXING” section of this label for additional information on the use of surfactants with this product.

Ammonium sulfate may be added to spray solutions of this product for application to Roundup Ready crops. Refer to the “MIXING” section of this label for instructions on the use of ammonium sulfate.

The following use directions are based on a clean start at planting by using a burndown application or tillage to control existing weeds before crop emergence. In no-till and stale seedbed systems, apply this product as a preplant burndown application to control existing weeds prior to crop emergence. Some weeds, such as black nightshade, broadleaf signalgrass, sicklepod, Texas panicum, sandbur, annual morning glory, woolly cupgrass, shattercane, wild proso millet, burcucumber, and giant ragweed with multiple germination times, or suppressed (stunted) weeds, might require a second application of this product for complete control.

Make second application after some re-growth has occurred and a minimum of 10 days after a previous application of this product.

Application rates of this product specified on this label for hard-to-control weeds, or those specified on separate supplemental labeling for this product, supersede rates in the “ANNUAL WEEDS RATE SECTION” and “PERENNIAL WEEDS RATE SECTION” of this label. Additional information on hard-to-control weeds can be found on Fact Sheets published for this product.

**RESTRICTIONS:** Observe the maximum application rates stated throughout this label. Maximum application rates apply to the use of this product combined with the use of any and all other herbicides containing glyphosate, whether applied separately or as mixtures. Calculate the application rates (glyphosate acid equivalents) and ensure that the total use of this and other glyphosate-containing products does not exceed the stated maximum rate. See the “PRODUCT INFORMATION” section of this label for more information on Maximum Application Rates. When applying this product as a tank mixture with one or more products, refer to each individual tank-mix product label for restrictions and apply the tank mixture in accordance with the most restrictive statements for each product in the tank.

Limitations, Restrictions, and Exceptions

## SOYBEANS

### Selective Equipment

USE INSTRUCTIONS: This product may be applied in soybean using a shielded applicator, hooded sprayer, wiper applicator or sponge bar. See additional instructions on the use of selective equipment in the "APPLICATION EQUIPMENT AND TECHNIQUES" section of the label.

RESTRICTIONS: Allow a minimum of 7 days between application and harvest.

### ANNUAL WEEDS

When water carrier volumes are between 16 and 40 gallons per acre for ground application, and between 6 and 15 gallons per acre for aerial application, the following use rates will control the annual weeds that follows:

- 22 fluid ounces per acre – grass and broadleaf annual weeds less than 6 inches in height or circumference, and vines less than 3 inches in length.
- 32 fluid ounces per acre – grass and broadleaf annual weeds 6 to 12 inches in height or circumference, and vines 3 to 6 inches in length.
- 44 fluid ounces per acre – grass and broadleaf annual weeds greater than 12 inches in height or circumference, and vines greater than 6 inches in length.

WHEN WATER CARRIER VOLUMES ARE BETWEEN 3 AND 15 GALLONS PER ACRE FOR GROUND APPLICATION, AND BETWEEN 3 AND 5 GALLONS PER ACRE FOR AERIAL APPLICATION, USE THE RATES SPECIFIED FOR INDIVIDUAL WEEDS IN THE "ANNUAL WEEDS RATE TABLE."

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

Older, mature (hardened) and otherwise tough to control annual weed species could require higher rates than specified in this table to be controlled, even if they meet the size requirements listed. This product may be applied at rates of up to 44 fluid ounces per acre for tough-to-control annual weeds and where dense weed populations exist. Follow all precautions and restrictions, including maximum application rates and crop stage timings specified in the directions for use on

specific crops, including Roundup Ready crops, and use sites listed.

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

Do not tank-mix this product with soil residual herbicides when using these rates unless otherwise directed.

For weeds that have been mowed, grazed or cut, allow re-growth to occur prior to application of this product.

## NOTES

- For control of downy brome in no-till systems, apply 16 fluid ounces of this product per acre.
- Brome, downy; Cheat; Rye, volunteer/cereal; Wheat: Performance of this product is better if application is made before this weed reaches the boot stage of growth.
- Apply 16 fluid ounces of this product per acre to control wild buckwheat in the cotyledon to 2-leaf stage. Apply 22 fluid ounces per acre to control 2- to 4-leaf wild buckwheat. For better control of wild buckwheat over 2 inches in size, make sequential applications of 22 fluid ounces followed by 22 fluid ounces of this product per acre.
- Do not apply when kochia is in the button stage.
- Control of Russian thistle can vary based on environmental conditions and spray coverage. If possible, apply this product in a tank mixture with 2,4-D, as described in the following section, to improve control.
- Horseweed/Marestail (*Conyza canadensis*); Johnsongrass, seedling; Kochia; Ragweed, common; Ragweed, giant; Waterhemp: A glyphosate-resistant biotype has been confirmed. For additional information, refer to the "WEED RESISTANCE MANAGEMENT" section. You may also visit on the Internet, [www.weedscience.org](http://www.weedscience.org) or contact your Monsanto Company representative..weedresistancemanagement.com, or contact your Monsanto Company representative.

## Annual Weeds - Handheld and Backpack Sprayers

For control of weeds listed, apply a 0.4-percent solution of this product to weeds

less than 6 inches in height or runner length prior to seed head formation in grasses or bud formation in broadleaf weeds. For control of annual weeds over 6 inches tall, or unless otherwise directed, use a 0.7-percent solution. For best results, apply a 1.5-percent solution of this product on harder-to-control perennials, such as bermudagrass, dock, field bindweed, hemp dogbane, milkweed and Canada thistle.

When using application methods that result in less than complete coverage, apply a 4-percent solution of this product for control of annual and perennial weeds, and a 4- to 7-percent solution for woody brush and trees.

#### Method

[Broadcast/Foliar Air](#)

[Broadcast/Foliar Ground](#)

[Wiper application](#)

[Hooded spray](#)

#### Rates

[field\\_rates 0](#)

[field\\_rates 1](#)

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#### Restricted Entry Interval

4 hours

#### Timings

[Postemergence \(Weed\)](#)