

# SPECIMEN LABEL



# SURMISE™

***SURMISE™ may be used for weed control in non LibertyLink® cotton when applied with a hooded sprayer in-crop. SURMISE™ may also be applied as a broadcast burn-down application before planting or prior to emergence of any conventional or transgenic variety of canola, corn, sweet corn, cotton, olive, rice, soybean or sugar beet. SURMISE™ may be used for post emergence weed control in listed tree vine and berry crops. SURMISE™ may also be applied for potato vine desiccation.***

Manufactured by:

**ALBAUGH, LLC**

1525 NE 36th Street  
Ankeny, Iowa 50021

**See inside booklet for additional  
PRECAUTIONARY STATEMENTS  
and complete DIRECTIONS FOR USE.**

AD061014

<b>ACTIVE INGREDIENT:</b>	
Glufosinate ammonium*	24.5%
<b>OTHER INGREDIENTS</b>	
	75.5%
<b>TOTAL</b>	100.0%

Equivalent to 2.34 pounds of active ingredient per U.S. gallon.

EPA Reg. No. 42750-258

## KEEP OUT OF REACH OF CHILDREN WARNING – AVISO

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

### FIRST AID

<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF IN THE EYES:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Do not give any liquid to the person.</li><li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>

**HOT LINE NUMBER:** Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR MEDICAL EMERGENCIES INVOLVING THIS PRODUCT, CALL CHEMTREC® TOLL FREE AT 1-800-424-9300.

**NOTE TO PHYSICIAN:** If this product is ingested, endotracheal intubation and gastric lavage should be performed as soon as possible followed by charcoal and sodium sulfate administration.

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## PRECAUTIONARY STATEMENTS

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### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

# WARNING

May be fatal if absorbed through skin. Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes, on skin, or on clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

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## PERSONAL PROTECTIVE EQUIPMENT (PPE)

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Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category C on an EPA chemical resistance category selection chart.

### Applicators and other handlers must wear

- For overhead exposure wear chemical-resistant headgear
- Coveralls worn over short-sleeved shirt and short pants
- Chemical-resistant gloves such as barrier laminate, butyl rubber >14 mils, nitrile rubber >14 mils, neoprene rubber >14 mils, polyvinyl chloride (PVC) >14 mils, or Viton® >14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear (goggles, face shield or safety glasses).

Wear a chemical-resistant apron when mixing/loading and cleaning equipment.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Mixers/loaders supporting aerial applications must wear a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any N, R, P, or HE filter.

## USER SAFETY RECOMMENDATIONS

### Users should:

1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
3. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

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## ENGINEERING CONTROL STATEMENT

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

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## ENVIRONMENTAL HAZARDS

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Do not apply directly to water or to areas where surface water is present. Do not apply to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment wash waters.

This pesticide is toxic to vascular plants and should be used strictly in accordance with the drift and run off precautions on this label in order to minimize off-site exposures.

Under some conditions, this product may have a potential to run off to surface water or adjacent land. Where possible, use methods which reduce soil erosion, such as no-till, limited till and contour plowing; these methods also reduce pesticide run off. Use of vegetation filter strips along rivers, creeks, streams, wetlands, etc. or on the downhill side of fields where run off could occur to minimize water runoff is recommended.

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## DIRECTIONS FOR USE

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

Do not use this product until you have read the entire label. Do not apply this product in a way that will contact workers or other persons either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**In the State of New York Only:** Not For Use In Nassau and Suffolk Counties.

### AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours with the exception of sweet corn irrigation activities which has a 4 day REI.

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

1. For overhead exposure wear chemical-resistant headgear
2. Coveralls worn over short-sleeved shirt and short pants
3. Chemical-resistant gloves such as barrier laminate, butyl rubber >14 mils, nitrile rubber >14 mils, neoprene rubber >14 mils, polyvinyl chloride (PVC) >14mils, or Viton >14 mils
4. Chemical-resistant footwear plus socks
5. Protective eyewear (goggles, face shield or safety glasses)

### — IMPORTANT CROP SAFETY INFORMATION — READ BEFORE USING THIS PRODUCT

SURMISE™ may be applied as a burndown treatment prior to planting or prior to emergence of any conventional or transgenic variety of canola, sweet corn, corn, cotton, olive, rice, soybean or sugar beet.

SURMISE™ may be applied to conventional or other transgenic cotton not tolerant to the active ingredient in SURMISE™ using a hooded sprayer.

Applications to trees, vines and berries should avoid contact of SURMISE™ solution, spray, drift or mist with green bark, stems, or foliage, as injury may occur to trees, berries and vines. Only trunks with callused, mature brown bark should be sprayed unless protected from spray contact by nonporous wraps, grow tubes, or waxed containers. Contact of SURMISE™ with parts of trees, berries or vines other than mature brown bark can result in serious damage.

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## PRODUCT INFORMATION

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SURMISE™ is a water-soluble herbicide for application as a foliar spray for the control of a broad spectrum of emerged annual and perennial grass and broadleaf weeds in trees, vines and berries. SURMISE™ may be applied for potato vine desiccation. SURMISE™ may also be applied as a broadcast burndown application before planting or prior to emergence of any conventional or transgenic variety of canola, sweet corn, corn, cotton, olive, rice, soybean or sugar beet.

SURMISE™ is only foliar-active with little or no activity in soil. Weeds that emerge after application will not be controlled. Apply SURMISE™ to actively growing weeds as described in the **Weed Control Recommendations for Row Crops** section to get maximum weed control. Uniform, thorough spray coverage is necessary to achieve consistent weed control. Necrosis of leaves and young shoots occur within 2 to 4 days after application under good growing conditions.

- SURMISE™ is rainfast four (4) hours after application to most weed species; therefore, rainfall within four (4) hours may necessitate retreatment or may result in reduced weed control.
- Applications should be made between dawn and two hours before sunset to avoid the possibility of reduced lambsquarters and velvetleaf control.
- Consult your local Cooperative Extension Service or Albaugh, Inc. Representative for guidelines on the optimum application timing for SURMISE™ in your region.
- Weed control may be reduced if application is made when heavy dew, fog and mist/rain are present; or when weeds are under stress due to environmental conditions such as drought, cool temperatures or extended periods of cloudiness.
- To maximize weed control do not cultivate from 5 days before an application to 7 days after an application.

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## ROTATIONAL CROP RESTRICTIONS\*

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Rotational crop planting intervals following application of SURMISE™ are listed below. Failure to comply with these restrictions may result in illegal residues in rotated crops.

Rotational Crop	Plant Back Interval (Minimum Rotational Crop Planting Interval from Last Application)
Canola, Sweet Corn, Corn, Cotton, Rice, Soybeans and Sugar beets	May be planted at any time
Root and Tuber Vegetables, Leafy Vegetables, Brassica Leafy Vegetables, and Small Grains (barley, buckwheat, oats, rye, teosinte, triticale, and wheat)	70 Days
All Other Crops	180 Days

\*See **Application Directions for Potato Vine Desiccation** for Rotational Crop Restrictions specifically after SURMISE™ applications to potatoes.

### Integrated Weed Management

The active ingredient in SURMISE™ is glufosinate-ammonium, which is a glutamine synthetase inhibitor (Group 10). Integrated weed management guidelines promote an economically viable, environmentally sustainable and socially acceptable weed control program regardless of the herbicide(s) used.

The highlights of a successful integrated weed management include:

1. Correctly identify weeds and look for trouble areas within field to identify resistance indicators.
2. Rotate crops.
3. Start the growing season with clean fields.
4. Rotate herbicide modes of action by using multiple modes of action during the growing season and apply no more than two applications of a single herbicide mode of action to the same field in a two-year period. One method to accomplish this is to rotate herbicide tolerant trait systems.
5. Apply listed rates of herbicides to actively growing weeds at the correct time with the right application.
6. Control any weeds that may have escaped the herbicide application.
7. Thoroughly clean field equipment between fields.

Contact your local agronomic advisor for more specific information on integrated weed management for your area.

## WEED CONTROL FOR ROW CROPS\*

Rates in ounces of formulated product per acre for the control of weeds at selected heights are shown in the weed control tables. In weed populations with mixed species, apply at a rate needed for the species that requires the highest rate.

BROADLEAF WEED CONTROL		
Weed Species	Maximum Weed Height or Diameter (Inches)	
	22 fl. oz./A	29 fl. oz./A
Amaranth, Palmer <sup>2</sup>	NR	4
Anoda, spurred	3	5
Beggarweed, Florida	4	5
Black medic	5	7
Blueweed, Texas	5	7
Buckwheat, wild	6	7
Buffalobur	6	7
Burcucumber	6	10
Catchweed bedstraw (cleavers)	2	4
Carpetweed	4	6
Chickweed, common	6	8
Cocklebur, common	6	14
Copperleaf, hophornbeam	4	6
Cotton, volunteer <sup>1</sup>	6	8
Croton, tropic	3	5
Croton, woolly	2	4
Eclipta	4	6
Devil's claw	2	4
Fleabane, annual	6	8
Galinsoga, hairy	6	8
Galinsoga, small flower	6	7
Groundcherry, cutleaf	4	5
Geranium, cutleaf	4	6
Hempnettle	4	6
Horsenettle, Carolina <sup>3</sup>	2	4
Jimsonweed	6	10
Knotweed	3	5
Kochia <sup>2</sup>	4	6
Ladysthumb	6	14
Lambsquarters, common <sup>2</sup>	4	6
Mallow, common	4	6
Mallow, Venice	6	8
Marestail	S	6–12
Marshelder, annual	4	6
Morningglory, entireleaf <sup>2</sup>	6	8
Morningglory, ivyleaf <sup>2</sup>	6	8
Morningglory, pitted <sup>2</sup>	6	8

BROADLEAF WEED CONTROL		
Weed Species	Maximum Weed Height or Diameter (Inches)	
	22 fl. oz./A	29 fl. oz./A
Morningglory, sharppod <sup>2</sup>	2	4
Morningglory, smallflower <sup>2</sup>	4	6
Morningglory, tall <sup>2</sup>	6	8
Mustard, wild	4	6
Nightshade, black	4	6
Nightshade, eastern black	6	8
Nightshade, hairy	6	8
Pennycress (stinkweed)	4	6
Pigweed, redroot <sup>2</sup>	3	4
Pigweed, prostrate <sup>2</sup>	3	4
Pigweed, spiny <sup>2</sup>	3	4
Pigweed, smooth <sup>2</sup>	3	4
Pigweed, tumble <sup>2</sup>	3	4
Puncturevine	4	6
Purslane, common	2	4
Pusley, Florida	S	3
Ragweed, common	6	10
Ragweed, giant	6	12
Senna coffee	4	6
Sesbania, hemp	6	8
Shepherd's-Purse	6	8
Sicklepod (java bean)	4	6
Sida, prickly	4	5 l
Smartweed, Pennsylvania	6	14
Smellmelon	4	6
Sowthistle, annual	6	8
Soybeans, volunteer <sup>1</sup>	6	8
Spurge, prostrate	2	4
Spurge, spotted	2	4
Starbur, bristly	4	6
Sunflower, common	6	14
Sunflower, prairie	3	5
Sunflower, volunteer	6	10
Thistle, Russian <sup>3</sup>	S	6–12
Velvetleaf <sup>2</sup>	3	4
Waterhemp, common <sup>2</sup>	NR	5
Waterhemp, tall <sup>2</sup>	NR	5

In cotton, SURMISE™ may be applied at 29 fl. oz./A three times per season.

b Do not apply more than 22 fl. oz./A post emergence in a single application to canola and corn.

(continued)

S Indicates suppression

<sup>1</sup> Volunteer LibertyLink crops from the previous season will not be controlled.

<sup>2</sup> For applications to corn, tank mixing with atrazine may enhance weed control in this species.

<sup>3</sup> May require sequential applications for control.

NR Not Recommended

GRASS WEED CONTROL			GRASS WEED CONTROL		
Weed Species	Maximum Weed Height or Diameter (Inches)		Weed Species	Maximum Weed Height or Diameter (Inches)	
	22 fl. oz./A	29 fl. oz./A <sup>ab</sup>		22 fl. oz./A	29 fl. oz./A <sup>ab</sup>
Barley, volunteer <sup>3</sup>	3	4	Millet, wild proso	6	7
Barnyardgrass	3	5	Millet, proso volunteer	6	7
Bluegrass, annual	3	5	Oat, wild <sup>2</sup>	3	4
Corn, volunteer <sup>1</sup>	10	12	Panicum, fall	3	5
Crabgrass, large <sup>2</sup>	3	5	Panicum, Texas	4	6
Crabgrass, smooth <sup>2</sup>	3	5	Rice, red	4	6
Cupgrass, woolly	6	12	Rice, volunteer <sup>1</sup>	4	6
Foxtail, bristly	6	8	Sandbur, field <sup>2</sup>	S	2
Foxtail, giant	6	12	Shattercane	6	8
Foxtail, green	6	12	Signalgrass, broadleaf	3	5
Foxtail, robust purple	6	8	Sprangletop	4	6
Foxtail, yellow <sup>2</sup>	3	4	Sorghum, volunteer	6	8
Goosegrass <sup>3</sup>	2	3	Stinkgrass	4	6
Johnsongrass, Seedling	3	5	Wheat, Volunteer <sup>2</sup>	4	5
Junglerice	3	5	Witchgrass	4	6

In cotton, SURMISE™ may be applied at 29 fl. oz./A three times per season.

Do not apply more than 22 fl. oz./A of SURMISE™ post emergence in a single application to canola and corn.

S Indicates suppression

<sup>1</sup> Volunteer LibertyLink crops from the previous season will not be controlled. A timely cultivation 7 to 10 days after an application and/or retreatment 10-21 days after the first application is recommended for controlling dense clumps of volunteer corn or rice.

<sup>2</sup> For best control of yellow foxtail, field sandbur, crabgrass, and wild oats treat prior to tiller initiation.

<sup>3</sup> A sequential application may be necessary for control.

BIENNIAL AND PERENNIAL WEEDS**			
For control of the biennial and perennial weeds listed below, tank mix partners or sequential applications of SURMISE™ are recommended (22 fl. oz./A followed by 22 fl. oz./A)			
Alfalfa	Bursage, woollyleaf	Johnsongrass, rhizome	Poinsettia, wild
Artichoke, Jerusalem	Chickweed, Mouse ear	Milkweed, common*	Pokeweed
Bermudagrass	Clover, Alsike	Milkweed, honeyvine*	Quackgrass*
Bindweed, field	Clover, red	Muhly, wirestem*	Sowthistle, perennial
Bindweed, hedge	Dandelion	Nightshade, silverleaf	Thistle, bull
Bluegrass, Kentucky	Dock, smooth	Nutsedge, purple*	Thistle, Canada
Blueweed, Texas	Dogbane, hemp*	Nutsedge, yellow*	Timothy*
Bromegrass, smooth	Goldenrod, gray*	Orchardgrass	Wormwood, biennial
Burdock			

\*Suppression Only

\*\*See the **Application Directions for Use on Cotton** section of this label for additional use rates.

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## APPLICATION AND MIXING PROCEDURES

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Do not use flood jet nozzles, controlled droplet application equipment, or air assisted spray equipment. Uniform, thorough spray coverage is important to achieve consistent weed control.

### Ground Application

Refer to the Rate Tables for proper application rates. DO NOT apply when winds are gusty or when conditions will favor movement of spray particles off the desired spray target. To avoid drift and ensure consistent weed control, apply SURMISE™ with the spray boom as low as possible while maintaining a uniform spray pattern. SURMISE™ should be applied broadcast in a minimum of 10 gallons of water per acre using a minimum spray pressure of 40 psi and a maximum ground speed of 10 mph. The use of 80 degree or 110 degree flat fan nozzles is highly recommended for optimum spray coverage and canopy penetration. Application of the spray at a 45 degree angle forward will result in better spray coverage. Under dense weed/crop canopies, a broadcast rate of 15-20 gallons of water per acre should be used so that thorough spray coverage will be obtained. DO NOT use raindrop nozzles. Boom height should be based on nozzle manufacturer recommendations. See the **Spray Drift Management** section of this label for additional information on proper application of SURMISE™.

### Aerial Application

Poor coverage will result in reduced weed control. For optimal weed control apply SURMISE™ in a minimum of 10 gallons per acre. Apply SURMISE™ using nozzles and pressures that generate MEDIUM (about 300 to 400 microns) spray droplets category as reported by the nozzle manufacturer and in accordance to ASABE S 572 based upon the selected air speed. Do not use nozzles and pressures that result in COARSE sprays. FINE sprays should also be avoided to minimize spray drift risk. See the **Spray Drift Management** section of this label for additional information on proper application of SURMISE™.

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## COMPATIBILITY TESTING

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If SURMISE™ is to be mixed with pesticide products not listed on this label, test the compatibility of the intended tank mixture prior to mixing the products in the spray tank. The following procedure assumes a spray volume of 25 gallons per acre. For other spray volumes, adjust the amount of the water used accordingly. Check compatibility as follows:

1. Place 1.0 pint of water from the source that will be used to prepare the spray solution in a clear 1-quart jar.
2. For each pound of a dry tank mix partner to be applied per acre, add 1.5 teaspoons to the jar.
3. For each 16 fl. oz. of a liquid tank mix partner to be applied per acre, add 0.5 teaspoon to the jar.
4. For each 16 fl. oz. of SURMISE™ to be applied per acre, add 0.5 teaspoon to the jar.
5. After adding all the ingredients, place a lid on the jar and tighten. Invert 10 times to mix.
6. Let the mixture stand for 15 minutes, and evaluate the solution for uniformity and stability. Look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. If the tank mix partners are not compatible, do not use the mixture in a spray tank.
7. After compatibility testing is complete, dispose of any pesticide wastes in accordance with the **Storage and Disposal** section of this label.

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## MIXING INSTRUCTIONS

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### Tank Mix Instructions

SURMISE™ may be applied in tank mix combinations with labeled rates of other products provided these other products are labeled for the timing and method of application for the crop to be treated. The tank mix partner must be used in accordance with the label limitations and precautions. No label dosage rates may be exceeded. SURMISE™ cannot be mixed with any product containing a label prohibition against such mixing. Refer to the specific crop section for rates and other restrictions.

SURMISE™ must be applied with properly calibrated and clean equipment. SURMISE™ is formulated to mix readily in water. Prior to adding SURMISE™ to the spray tank, ensure that the spray tank is thoroughly clean, particularly if an herbicide with the potential to injure crops was previously used (see **Cleaning Instructions**).

Mix SURMISE™ with water to make a finished spray solution as follows:

1. Fill the spray tank half full with water.
2. Start agitation.
3. If mixing with a flowable/wettable powder tank mix partner. Prepare a slurry of the proper amount of the product in a small amount of water. Add the slurry to the spray tank.
4. Add the appropriate amount of ammonium sulfate (AMS) to the spray tank.
5. If mixing with a liquid tank mix partner, add the liquid mix partner next.
6. Complete filling the spray tank with water.
7. Add the proper amount of SURMISE™ and continue agitation.
8. If foaming occurs, use a silicone-based antifoam agent.

Ensure that all spray system lines including pipes, booms, etc. have the correct concentration of spray solution by flushing out the spray system lines before starting the crop application.

If tank mix partners recommended on this label are added, maintain good agitation at all times until contents of the tank are sprayed. If the spray mixture is allowed to settle, thorough agitation is required to re-suspend the mixture before spraying is resumed. Keep bypass line on or near bottom of tank to minimize foaming. Screen size in nozzles or line strainers must be 50 mesh or larger.

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## CLEANING INSTRUCTIONS

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Before using SURMISE™, thoroughly clean bulk storage tank, refillable tank, nurse tanks, spray tank, lines, and filter, particularly if an herbicide with the potential to injure crops was previously used. Equipment should be thoroughly rinsed using a commercial tank cleaner.

After using SURMISE™, triple rinse the spray equipment and clean with a commercial tank cleaner before using for crops not labeled LibertyLink. Make sure any rinsate or foam is thoroughly removed from spray tank and boom. Rinsate may be disposed following the pesticide disposal directions on this label.

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## SPRAY DRIFT MANAGEMENT

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Spray drift may result in injury to non-target crops or vegetation. To avoid spray drift, do not apply when wind speed is greater than 10 MPH or during periods of temperature inversions. Do not apply when weather conditions, wind speed, or wind direction may cause spray drift to non-target areas.

### AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

1. All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers.
2. For all non-aerial applications, wind speed must be measured adjacent to the application site, on the upwind side, immediately prior to application.

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

Do not apply under circumstances where possible drift to unprotected persons or to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption can occur.

**Aerial Drift Management:** The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops.

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

Where states have more stringent regulations, they should be observed. The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information**.

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## AERIAL DRIFT REDUCTION ADVISORY INFORMATION

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

### AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

#### Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.
- **Boom Length** - For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.
- **Application Height** - Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**Swath Adjustment** - When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

**Wind** - Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Applications should be avoided below 2 miles per hour due to variable wind direction and high inversion potential.

**NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**Temperature and Humidity** - When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry. Avoid spraying during conditions of low humidity and/or high temperatures.

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

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## APPLICATION DIRECTIONS FOR BURNDOWN USE

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SURMISE™ may be applied as a burndown treatment prior to planting or prior to emergence of any conventional or transgenic variety of canola, corn, cotton, rice, soybean or sugar beet. Apply a minimum of 29 fl. oz./A of SURMISE™ for burndown of existing weeds just prior to planting or prior to emergence of canola, corn, cotton, rice, soybean or sugar beets. For best results, apply to emerged, young, actively growing weeds. Warm temperatures, high humidity, and bright sunlight improve the performance of SURMISE™. Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures.

- In cotton, if environmental conditions prevent timely applications, a single application may be made of up to 43 fl. oz./A of SURMISE™. If more than 29 fl. oz./A are used in any single application, the season total may not exceed 72 fl. oz./A including all application timings.
- In soybean, if environmental conditions prevent timely applications, a single application may be made of up to 36 fl. oz./A of SURMISE™. If 29-36 fl. oz./A are used in a single burndown application, one additional in-season application may be made at up to 29 fl. oz./A. The season total may not exceed 65 fl. oz./A including all application timings.
- In canola, corn, rice and sugar beets, if environmental conditions prevent timely applications, a single application may be made of up to 36 fl. oz./A of SURMISE™. No additional applications of SURMISE™ may be made post emergence to the crop during the growing season.
- In Rice, following a burndown application, there must be a minimum 7 day holding period after flooding of the field.

	Burndown	Season Max
Cotton Use Pattern 1	29 fl. oz./A	87 fl. oz./A
Cotton Use Pattern 2	30-43 fl. oz./A	72 fl. oz./A
Soybean Use Pattern	29-36 fl. oz./A	65 fl. oz./A
Canola, Corn, Rice, Sugar beets	29-36 fl. oz./A	36 fl. oz./A

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## APPLICATION DIRECTIONS FOR USE ON SUGAR BEETS

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THOROUGH SPRAY COVERAGE IS VERY IMPORTANT. SURMISE™ works best when weeds are actively growing. A cultivation may be made at least 5 days before a SURMISE™ application or 5 days after a SURMISE™ application.

### APPLICATION TIMING

Applications of SURMISE™ on sugar beets may be made from the cotyledon stage up to the 10-leaf stage of the sugar beet. SURMISE™ is a foliar active material with no soil residual activity. For best results, apply to emerged, young, actively growing weeds. Weeds that emerge after application will not be controlled. SURMISE™ will have an effect on weeds that are larger than the recommended leaf stage; however, speed of activity and control may be reduced. Weed control may be reduced if application is made when heavy dew, fog and mist/rain are present or when weeds are under stress due to drought, cool temperatures, or extended periods of cloudiness. SURMISE™ is rainfast 4 hours after application; therefore, rainfall within 4 hours may necessitate retreatment.

For best weed control and sugar beet yield, SURMISE™ applications should begin when weeds are up to 1 inch in height or diameter. Repeat applications should be made when newly germinated weeds again reach 1 inch in height or diameter. Refer to the **Rate Tables for Weed Control In Sugar Beets** for selection of the proper rate dependent upon the weed species present and size. A repeat application of SURMISE™ or a tank mix application with a residual herbicide selected from the tank mix partners listed on this label will be needed to control weeds that have not yet emerged at the time of application.

#### RESTRICTIONS TO THE DIRECTIONS FOR USE ON SUGAR BEETS

1. **DO NOT** apply more than 30 fl. oz./A of SURMISE™ in one application and DO NOT apply more than 60 fl. oz./A of SURMISE™ on the sugar beet crop per growing season.
2. **DO NOT** apply SURMISE™ within 60 days of harvesting sugar beets.
3. **DO NOT** plant rotation crops in a field treated with SURMISE™ within 120 days after the last application of this product with the exception of wheat, barley, buckwheat, millet, oats, rye, sorghum, and triticale which may be planted 70 days after the last application of this product. Corn, soybeans, canola, and sugar beets tolerant to the active ingredient of SURMISE™ may be planted at any time.
4. **DO NOT** graze the treated crop or cut for hay.
5. **DO NOT** add surfactants. Antifoams or drift control agents may be added if needed.
6. **DO NOT** apply SURMISE™ if sugar beets show injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.).
7. **DO NOT** apply this product through any type of irrigation system.

#### RATE TABLES FOR WEED CONTROL IN SUGAR BEETS

The rate of SURMISE™ in fluid ounces (pints) of formulated product per acre to be used for the control of weeds at selected heights are shown in the following tables. In weed populations with mixed species, apply the rate needed for all species present.

GRASS WEEDS CONTROLLED WITH SURMISE™			
Weed Species	Growth Stage of Weed* (Maximum Height)		Comments on Weed Growth Stage/ Application Timing/ Number of Applications
	15 fl. oz./A (0.9 pt./A)	20 fl. oz./A (1.25 pt./A)	
Barley, volunteer	1–2 leaf (2")	3 leaf (3")	Multiple applications may be required
Barnyardgrass	1–3 leaf (2")	4–5 leaf (3")	Maximum of 1 tiller
Corn, volunteer	1–2 leaf (3")	3–4 leaf (6")	—
Crabgrass, large	1–3 leaf (2")	4–5 leaf (3")	Maximum of 1 tiller
Crabgrass, smooth	1–3 leaf (2")	4–5 leaf (3")	Maximum of 1 tiller
Cupgrass, woolly	1–5 leaf (4")	(8")	—
Foxtail, giant	1–4 leaf (3")	5–6 leaf (4")	Maximum of 2 tillers
Foxtail, green	1–4 leaf (3")	5–6 leaf (4")	Maximum of 2 tillers
Foxtail, yellow	1–3 leaf (1")	4 leaf (2")	Apply prior to tillering
Millet, volunteer proso	1–3 leaf (2")	4–5 leaf (3")	Maximum of 1 tiller
Millet, wild proso	1–3 leaf (2")	4–5 leaf (3")	Maximum of 1 tiller
Oat, wild	1–2 leaf (2")	3 leaf (3")	Maximum of 1 tiller
Panicum, fall	1–3 leaf (2")	4–5 leaf (3")	Maximum of 1 tiller
Panicum, Texas	1–3 leaf (2")	4–5 leaf (3")	Maximum of 1 tiller
Sandbur, field	—	1–4 leaf (2")	Apply prior to tillering
Wheat, volunteer	1–2 leaf (2")	3 leaf (3")	Maximum of 1 tiller

\*Apply up to 30 fl. oz./A (1.88 pt./A) if weeds exceed the growth stage shown in the table.

For improved control of heavy populations or larger than recommended volunteer wheat, volunteer barley, yellow foxtail, and wild oats, SURMISE™ can be tank mixed with Assure® II Herbicide, Poast® Herbicide, Prism® Herbicide, or Select® 2EC Herbicide.

PERENNIAL WEEDS CONTROLLED BY SURMISE™			
Weed Species	Growth Stage of Weed* (Maximum Height/Diameter)		Comments on Number of Applications
	15 fl. oz./A (0.9 pt./A)	20 fl. oz./A (1.25 pt./A)	
Quackgrass	—	1–3 leaf (3")	Multiple applications required
Sowthistle, perennial	—	1–4 leaf (3")	Multiple applications required
Thistle, Canada	—	1–4 leaf (3")	Multiple applications required

\*Apply up to 30 fl. oz./A (1.88 pt./A) if weeds exceed the growth stage shown in the table.

BROADLEAF WEEDS CONTROLLED BY SURMISE™			
Weed Species	Growth Stage of Weed* (Maximum Diameter)		
	15 fl. oz./A (0.9 pt./A)	20 fl. oz./A (1.25 pt./A)	
Buckwheat, wild	1–4 leaf (2")	5–6 leaf (3")	
Buffalobur	1–4 leaf (2")	5–6 leaf (3")	
Carpetweed	—	1–4 leaf (2")	
Chickweed, common	1–4 leaf (2")	5–6 leaf (3")	
Cocklebur, common	1–6 leaf (3")	7–8 leaf (5")	
Kochia	(1")	(2")	
Ladysthumb	1–2 leaf (1")	3–4 leaf (3")	
Lambsquarter, common	1–2 leaf (1")	4–5 leaf (3")	
Mallow, Venice	1–4 leaf (2")	5–6 leaf (3")	
Marshelder	1–2 leaf (1")	3–4 leaf (2")	
Mustard, wild	1–4 leaf (2")	5–6 leaf (3")	
Nightshade, eastern black	1–4 leaf (2")	5–6 leaf (3")	
Pigweed, prostrate	(1")	(3")	
Pigweed, red root	1–2 leaf (1")	3–4 leaf (3")	
Pigweed, smooth	1–2 leaf (1")	3–4 leaf (3")	
Pigweed, spiny	1–2 leaf (1")	3–4 leaf (3")	
Purslane, common	(1")	(2")	
Ragweed, common	1–6 leaf (3")	7–8 leaf (5")	
Ragweed, giant	1–4 leaf (2")	5–6 leaf (3")	
Shepherd's-Purse	1–4 leaf (2")	5–6 leaf (3")	
Smartweed, Pennsylvania	1–2 leaf (1")	3–4 leaf (3")	
Sowthistle, annual	1–4 leaf (2")	5–6 leaf (3")	
Sunflower, common	1–6 leaf (3")	7–8 leaf (5")	
Thistle, Russian	(1")	(2")	
Velvetleaf	1–2 leaf (1")	3–4 leaf (3")	

\*Apply up to 30 fl. oz./A (1.88 pt./A) if weeds exceed the growth stage shown in the table.

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## APPLICATION DIRECTIONS FOR USE ON SWEET CORN

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### APPLICATION TIMING FOR SWEET CORN

Applications for SURMISE™ on sweet corn may be made from emergence until sweet corn is 24" tall or in the V-7 stage of growth (i.e., 7 developed collars, whichever comes first). Apply at a rate of 20 fl. oz./A. SURMISE™ must be applied with ammonium sulfate (AMS) for use on sweet corn. Two applications of SURMISE™ can be made to sweet corn in a growing season.

### RESTRICTIONS TO THE DIRECTIONS FOR USE ON SWEET CORN

- **DO NOT** apply SURMISE™ within 50 days of harvesting sweet corn ears and within 55 days of harvesting stover.
- **DO NOT** apply more than 40 fl. oz./A of SURMISE™ on sweet corn per growing season.
- **DO NOT** apply more than two applications of SURMISE™ to the sweet corn crop. Sequential applications should be at least 10 days apart.
- If SURMISE™ was used in a burndown application, no post emergence applications may be applied to the crop.
- **DO NOT** use nitrogen solutions as spray carriers.
- **DO NOT** apply SURMISE™ if corn shows injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.).
- **DO NOT** apply this product through any type of irrigation system.

A silicone based antifoam agent may be added if needed.

Refer to the **Rotational Crop Restrictions** section under the Information heading of this label for the appropriate rotational crop plant back intervals.

See **Application Directions for Use on Field Corn and Silage Corn** for Application Methods, Mixing Instructions, and Weed control Tables.

### Tank Mix Instructions for use on Sweet Corn

SURMISE™ may be tankmixed with Laudis® Herbicide, Callisto™, Atrazine, or Permit®. When using SURMISE™ in tankmix combinations, carefully follow the **Directions for Use** labeling of the selected partner.

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## APPLICATION DIRECTIONS FOR USE ON LISTED TREE, VINE, AND BERRY CROPS

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Apply SURMISE™ to the tree vine and berry crops listed below. Uniform, thorough spray coverage is necessary to achieve consistent weed control.

### REGISTERED CROPS

- Bush berries, blueberry, currant, elderberry, gooseberry and huckleberry.  
Other Berries: Lingonberry, juneberry and salal.
- Citrus – Lemon, orange, grapefruit, lime, mandarin, tangerine, tangelo, calamondin, kumquat, pummelo, citron, citrus hybrids, tangor and cultivars varieties and/or hybrids of these.
- Olives
- Pome Fruit – Apple, pear, crabapple, loquat, mayhaw, quince, azarole, medlar, tejocote, cultivars varieties and/or hybrids of these.
- Stone Fruit – Apricot, cherry, peach, nectarine, plum, capulin, jujube, sloe, and cultivars varieties and/or hybrids of these.
- Tree Nuts – Almonds, filberts, hickory nuts, macadamia nuts (bush nuts), pecans, pistachios and walnuts.
- Vineyards - All grape varieties (table wine and raisins).

### APPLICATION RATE AND TIMING

For best results, apply to emerged, young, actively growing weeds. Warm temperatures, high humidity and bright sunlight improve the performance of SURMISE™. Weed control may be reduced when applications are made to weeds under stress due to drought or cool temperatures. Weeds under stress or in dense populations will require application at the highest specified label use rate. Stressed conditions also include prior treatments of other contact or systemic herbicides. Do not retreat these weeds with SURMISE™ until sufficient regrowth has occurred.

Apply SURMISE™ as a directed spray to control undesirable vegetation in tree, vine, and berries listed on this label. Apply as a broadcast, banded, or spot treatment application depending on the situation to control weeds listed under the heading **Weeds Controlled in Tree, Vine, and Berry Crops**. Avoid direct spray or drift to desirable vegetation. Regrowth may occur due to the weed stage of growth at application low use rate or environmental conditions. Repeat applications of SURMISE™ may be necessary to control plants generating from underground parts or seed.

Avoid contact of SURMISE™ solution, spray, drift, or mist with green bark, stems, or foliage, as injury may occur to trees, vines, and berries. Only trunks with callused, mature brown bark should be sprayed unless protected from spray contact by nonporous wraps, grow tubes, or waxed containers. Contact of SURMISE™ with parts of trees, vines, or berries other than mature brown bark can result in serious damage.

**Application Methods for Broadcast Applications**

Apply SURMISE™ at the rates listed below for broadcast applications based on weed size and stage of growth.

Weed Size and Stage	SURMISE™ Rate
Weeds < 3" in height	48 fl. oz./A
Weeds < 6" in height, pre-tiller grasses	56 fl. oz./A
Weeds > 6" in height and/or grasses that have tillered	56–82 fl. oz./A

**Application Methods for Banded Spray Applications**

Banded applications may be used using the following formula to calculate the amount of herbicide needed for orchard or vineyard strip sprays.

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Rate per acre broadcast} = \text{Amount of herbicide needed for treatment}$$

**Application Methods for Spot or Directed-Spray Applications**

For spot or directed-spray applications by backpack sprayers only (no mechanically pressured handgun applications allowed) mix SURMISE™ at 1.7 fl. oz. of product per gallon of water. Apply to undesirable vegetation foliage until wet but prior to runoff. Ensure uniform and complete coverage. Thoroughly clean the sprayer following use. **DO NOT** make spot or directed-spray applications to tree or vine trunk as injury may occur.

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## WEEDS CONTROLLED IN TREE, VINE, AND BERRY CROPS

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BROADLEAF WEEDS			
Alkali sida	Fleabane, annual	Morningglory, ivyleaf	Smartweed, Pennsylvania
Ammannia, purple	Goosefoot	Morningglory, pitted	Sowthistle, annual
Arrowhead, California	Gromwell, field	Mullein, turkey	Spurge, prostrate
Buckwheat, wild	Groundcherry, cutleaf	Mustard, wild	Starthistle, yellow
Buffalobur	Groundsel, common	Nettle	Sunflower, common
Burclover, California	Henbit	Nightshade, black	Sunflower, prairie
Carpetweed	Jimsonweed	Nightshade, Eastern black	Sunflower, volunteer
Chickweed, common	Knotweed	Nightshade, hairy	Swinecress
Chinese thornapple	Kochia	Pennycress	Thistle, Russian
Cocklebur, common	Lambsquarters, common	Pigweed, redroot	Turnip, wild
Copperleaf, Virginia	Lettuce, miner's	Pineapple weed	Velvetleaf
Cudweed	Lettuce, prickly	Puncturevine	Vervain
Cutleaf eveningprimrose	London rocket	Purslane, common	Vetch
Dodder	Mallow, common	Radish, wild	Virginia copperleaf
Eclipta	Malva (little mallow)	Ragweed, common	Willowherb, panicle
Fiddleneck	Marestail	Ragweed, giant	
Filaree	Mayweed	Redmaids	
Filaree, redstem	Morningglory, entireleaf	Shepherd's-Purse	

(continued)

### GRASS WEEDS

Barnyardgrass	Crabgrass, smooth	Junglerice	Shattercane
Bluegrass, annual	Cupgrass, woolly	Oat, wild	Sprangletop
Bromegrass, ripgut	Foxtail, giant	Panicum, fall	Stinkgrass
Bromegrass, downy	Foxtail, green	Panicum, Texas	Wheat, volunteer
Canarygrass	Foxtail, yellow	Rush, toad**	Windgrass
Chess, soft	Goosegrass	Ryegrass, annual*	Witchgrass
Crabgrass, large	Johnsongrass, seedling	Sandbur, field	

### BIENNIAL AND PERENNIAL WEEDS

Aster, white heath	Dallisgrass	Mustard, tansy	<i>Rubus</i> spp.
Bindweed, field	Dandelion	Nutsedge, purple	Spurge, leafy
Bindweed, hedge	Dock, curly	Nutsedge, yellow	Thistle, bull
Bluegrass, Kentucky	Dogbane (hemp)	Onion, wild	Thistle, musk
Bromegrass, smooth	Fescue	Orchardgrass	Torpedograss
Bulrush	Goldenrod, gray	Paragrass	Vaseygrass
Burdock	Guineagrass	Plantain	Woodsorrel
Canada thistle	Horsetail	Poison ivy/oak	Yarrow, common
Clover, Alsike	Lovegrass	Quackgrass	
Clover, red	Mugwort	Rocket, yellow	
Clover, white	Mullein, common	Rose, wild	

(Apply to annual ryegrass prior to 3 inches in height)

\*Indicates Suppression

### RESTRICTIONS TO THE DIRECTIONS FOR USE ON TREE, VINE, AND BERRY CROPS:

- **DO NOT** apply more than 164 fl. oz. of SURMISE™ per acre (3 lbs. ai/A) to berry bushes and stone fruit in a 12-month period.
- **DO NOT** make more than 2 applications at a maximum rate of 82 fl. oz. per acre (1.5 lbs. ai/A) per application.
- **DO NOT** apply more than 246 fl. oz. (4.5 lbs. ai/A) of this product per acre to tree nuts, vines, pome fruit, citrus and olives in any calendar year, **DO NOT** make more than 3 applications at a maximum rate of 82 fl. oz. per acre (1.5 lb. ai/A) per application.
- **DO NOT** graze, harvest, and/or feed treated orchard cover crops to livestock.
- **DO NOT** apply this product through any type of irrigation system.
- **DO NOT** apply this product aerially to tree, berry, or vine crops.
- **DO NOT** apply this product within 14 days of nut, fruit, berry, or grape harvest.
- Applications to citrus, fruits, pome fruits and olives must be a minimum of 14 days apart.
- Applications to stone fruit must be a minimum of 28 days apart.
- **DO NOT** make spot spray applications to suckers as tree injury may occur.

### SUCKER CONTROL WITH SURMISE™

SURMISE™ will reduce or eliminate sucker growth when applied to suckers that are young, green, and uncallused. For sucker control, apply a split application approximately 4 weeks apart at 56 fl. oz. of product/A. Coverage of all sucker foliage is necessary for optimum control. Suckers should not exceed 12 inches in length.

### TANKMIX PARTNER INSTRUCTIONS

SURMISE™ does not provide residual weed control or control of unexposed plant parts. Certain herbicide tank mixes may aid in the performance of SURMISE™ or be added to provide residual herbicide activity. No additional surfactant is needed with any tank mix partner. SURMISE™ may be applied in tank mix combinations with labeled rates of other products provided these other products are labeled for the timing and method of application for the crop to be treated. The tank mix partner must be used in accordance with the label limitations and precautions. No label dosage rates may be exceeded. SURMISE™ cannot be mixed with any product containing a label prohibition against such mixing.

Chateau  
Devrinol® 50WP  
Goal® 1.6E

Karmex® DF  
Princep® 4L  
Simazine 4L

Simazine 80W  
Simazine 90  
Sinbar® 80W

Solicam® DF  
Surflan® A.S.

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## APPLICATION DIRECTIONS FOR POTATO VINE DESICCATION

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### APPLICATION RATE AND TIMING

Apply SURMISE™ at the beginning of natural senescence of potato vines. Apply 21 fl. oz./A. Do not split this application or apply more than one application per harvest. Potato varieties with heavy or dense vines may require an application of another desiccation product to complete vine desiccation.

Thorough coverage of the potato vines to be desiccated is essential. Use a sufficient volume of water (20 to 100 gpa) to obtain a thorough coverage of the potato vines. Vary the gallons of water per acre and the spray pressure as indicated by the density of the potato vines to assure thorough spray coverage. Increase the spray volume to at least 30 gallons of water per acre when the potato vine canopy is dense or under cool and dry conditions. Apply SURMISE™ with the spray boom as low as possible to achieve thorough coverage of the potato vines for best control and to minimize drift potential.

### RESTRICTIONS TO THE DIRECTIONS FOR USE IN POTATO VINE DESICCATION

- **DO NOT** apply more than 21 fl. oz./A to potato vines per season.
- **DO NOT** harvest potatoes until 9 days or more after application of SURMISE™.
- **DO NOT** apply to potatoes grown for seed.
- Canola, corn, cotton, rice, soybean and sugar beets may be planted at any time after the application of SURMISE™ as a potato vine desiccant.
- **DO NOT** plant treated areas to wheat, barley, buckwheat, millet, oats, rye, sorghum and triticale until 30 or more days after an application of SURMISE™ as a potato vine desiccant.
- **DO NOT** plant treated areas to crops other than those listed in this use precautions section until 120 or more days after an application of SURMISE™ as a potato vine desiccant.

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## APPLICATION DIRECTIONS FOR USE ON RICE

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### THOROUGH SPRAY COVERAGE IS VERY IMPORTANT.

For best results, apply to emerged, young, actively growing weeds. SURMISE™ is a foliar active material with little or no soil residual activity. Weeds that emerge after application will not be controlled. Weed control may be reduced if application is made when heavy dew, fog and mist/rain are present or when weeds are under stress due to drought, cool temperatures, or extended periods of cloudiness. SURMISE™ is rainfast 4 hours after application to most weed species. Rainfall within 4 hours after application may necessitate retreatment or reduced weed control may result.

### RESTRICTIONS TO THE DIRECTIONS FOR USE ON RICE

- **DO NOT** exceed 48 oz. of SURMISE™ per growing season.
- **DO NOT** apply SURMISE™ within 70 days of harvesting rice.
- **DO NOT** plant rotation crops in a field treated with SURMISE™ within 120 days after the last application of this product with the exception of wheat, barley, buckwheat, millet, oats, rye, sorghum and triticale which may be planted 70 days after the last application of this product. The crops listed on this label may be planted at any time.
- **DO NOT** apply this product through any type of irrigation system.
- **DO NOT** use paddy water from a rice field treated with SURMISE™ for irrigation or as a water source for livestock or for raising crayfish.
- **DO NOT** add surfactants or crop oils. A silicon based antifoam agent may be added, if needed.

### Application Timing for the Southern United States (Arkansas, Louisiana, Mississippi, Missouri, Texas)

Applications of SURMISE™ on rice may be made from the 1-leaf stage through the mid-tillering stage of development. Refer to the **Rate Tables for Weed Control in Rice** to select the proper rate to use to control the weed species present. SURMISE™ will have an effect on weeds that are larger than the recommended leaf stage; however, speed of activity and control may be reduced.

Rice fields should be as level as possible and free of large clods to obtain uniform germination of rice and grassy weeds and to ensure uniform flood levels. If necessary, fields may be flushed prior to treatment so that the rice and grass/broadleaf weeds are actively growing at the time of treatment. If the rice field is flushed, allow sufficient time for germination of the weed species to occur prior to treatment.

Apply SURMISE™ prior to the permanent flood when weeds are in the 1- to 5-leaf stage. A second application is recommended after a new flush of weeds emerge. A second application may be made from 10-14 days after the first application up to the mid-tillering growth stage of the rice. For optimum weed control, apply SURMISE™ before canopy closure to ensure thorough spray coverage of the weed species.

When applying SURMISE™ post flood, lower the water level so that 75% of the weed foliage is exposed. The water level may be brought back to normal level 48 hours after the herbicide application.

## APPLICATION TIMING FOR CALIFORNIA

### 1 Water Seeded Rice

SURMISE™ can be applied when the rice is in the 1-leaf stage to mid-tillering stage of development (but prior to panicle initiation). For optimum weed control, apply SURMISE™ when rice is in the 4- to 5-leaf stage. Lower the water in the field in order to expose small broadleaf weeds and sedges. The water level may be brought back to the normal level 24 hours after herbicide application. The water level must be controlled such that the rice is not completely covered. A second application is recommended at the 2- to 3-tiller stage of rice. For optimum weed control, apply SURMISE™ before canopy closure to ensure thorough spray coverage of the weed species.

- Minimum paddy depth of 8 inches.
- Do not exceed 24 fl. oz. (0.44 lbs. ai/A) per single application.
- Maximum of two applications at 24 fl. oz. (0.44 lbs. ai/A) with a minimum 10-day retreatment interval
- Do not exceed 48 fl. oz. (0.89 lbs. ai/A) per year.
- Minimum 7-day holding period after last application.

### 2 Drilled or Dry Seeded Rice

Rice fields should be as level as possible and free of large clods to obtain uniform germination of rice and grassy weeds and to ensure uniform flood levels. If necessary, fields may be flushed prior to treatment so that the rice and grass/broadleaf weeds are actively growing at the time of treatment. If the rice field is flushed, allow sufficient time for germination of the weed species to occur prior to treatment.

Apply SURMISE™ prior to the permanent flood when weeds are in the 1.5-leaf stage. A second application is recommended after a new flush of weeds emerge. A second application may be made from 10-14 days after the first application up to the mid-tillering growth stage of the rice. For optimum weed control, apply SURMISE™ before canopy closure to ensure thorough spray coverage of the weed species.

- Do not exceed 48 fl. oz. (0.89 lbs ai/A) per single application.
- 2 applications can be made at 24 fl. oz. (0.44 lbs. ai/A) with a minimum 10 day retreatment interval
- Do not exceed 48 fl. oz. (0.89 lbs ai/A) per year.
- Minimum paddy depth of 4 inches.
- Minimum 7-day holding period after flooding of the field.

### Rate Tables for Weed Control in Rice.

Rates in ounces of formulated product per acre for the control of weeds are shown in the following tables. In weed populations with mixed species, apply the rates needed for all species present.

1 Southern United States (Arkansas, Louisiana, Mississippi, Missouri, Texas)

GRASS WEEDS CONTROLLED WITH SURMISE™ IN RICE GROWN IN THE SOUTHERN UNITED STATES		
Weed Species	Maximum Weed Growth Stage (leaf/tiller)	
	20 fl. oz./A	24 fl. oz./A
Barnyardgrass	4 leaf	2 tiller
Crabgrass, large	4 leaf	2 tiller
Fall Panicum	4 leaf	2 tiller
Johnsongrass	4 leaf	2 tiller
Rice red*	2 leaf	2 tiller
Signalgrass, broadleaf	4 leaf	2 tiller
Sprangletop	4 leaf	2 tiller
Watergrass	6 leaf	2 tiller

\*For optimum red rice control, make two applications of SURMISE™. The first application should be made when the red rice is in the 2- to 3-leaf stage. The second application should be made after the newly emerged red rice reaches the 2- to 3-leaf stage but before the white rice reaches the mid-tillering stage of development

**BROADLEAF WEEDS SUPPRESSED OR CONTROLLED WITH SURMISE™ IN RICE GROWN IN THE SOUTHERN UNITED STATES**

Weed Species	Maximum Weed Height or Diameter (Inches)	
	20 fl. oz./A	24 fl. oz./A
Ammannia	2	4
California Arrowhead	**	4
Cocklebur, common	6	10
Curly Indigo	2	8
Dayflower	2	4
Eclipta	4	6
Morningglory, ivyleaf	4	8
Morningglory, pitted	4	8
Northern Ointvetch	4	8
Pennsylvania smartweed	4	8
Sesbania hemp	4	10

\*\* indicates suppression

SURMISE™ applied at 24 fl. oz./A may control or suppress the sedges shown in the following table. Control of sedges may be enhanced by using a second application or by a tank mix with other herbicides recommended on this label.

**SEDGES SUPPRESSED WITH SURMISE™ IN RICE GROWN IN THE SOUTHERN UNITED STATES**

Sedges	24 fl. oz. A
Bulrushes	**
Flatsedge	**
Nutsedge	**
Smallflower Umbrella plant	**

\*\* indicates suppression

*2 California*

**GRASS WEEDS CONTROLLED WITH SURMISE™ AT 20 FL. OZ./A IN RICE GROWN IN CALIFORNIA**

Weed Species	Maximum Weed Growth Stage
Barnyardgrass	4 leaf
Sprangletop	4 leaf
Watergrass	4 leaf

**BROADLEAF WEEDS SUPPRESSED OR CONTROLLED WITH SURMISE™ IN RICE GROWN IN CALIFORNIA**

Weed Species	Maximum Weed Height (Inches)	
	20 fl. oz./A	24 fl. oz./A
Ammannia	2	4
California Arrowhead	2	4
Ducksalad	2	4

SURMISE™ applied at 20 to 24 fl. oz./A may control or suppress the sedges shown in the following table. Control of sedges may be enhanced by using a second application or tank mixes with other herbicides.

**SEDGES SUPPRESSED OR CONTROLLED WITH SURMISE™ IN RICE GROWN IN CALIFORNIA****TANK MIX INSTRUCTIONS FOR USE IN RICE**

Weed Species	Maximum Weed Height (Inches)	
	20 fl. oz./A	24 fl. oz./A
Ricefield bulrush	**	4
Smallflower Umbrellaplant	**	4

\*\* Indicates suppression

When using SURMISE™ in tank mix combinations, follow the precautions and directions of the most restrictive label for the appropriate timing rate and crop response information.

*1 Southern United States (Arkansas, Louisiana, Mississippi, Missouri, Texas)*

To enhance weed control and/or provide residual control in rice herbicides.

Arroso® 3.3E Herbicide

Londax® Herbicide

Stam® Herbicide

Basagran® Herbicide

Prowl® 3.3EC Herbicide

Permit® Herbicide

Bolero EC® Herbicide

Propanil

*2 California*

To enhance weed control and/or provide residual control in rice, SURMISE™ may be mixed with the following herbicides.

Londax® Herbicide

Stam® Herbicide

Super Wham® Herbicide

**APPLICATION DIRECTIONS FOR USE IN RICE SEED PROPAGATION**

SURMISE™ is to be applied as a foliar spray to selectively remove susceptible segregates, i.e., undesirable rice plants which are not tolerant to glufosinate ammonium, and to control of a broad spectrum of emerged grass and broadleaf weeds in rice seed production fields. Inbred lines or breeding material not possessing the glufosinate ammonium tolerance gene will be severely injured or killed if treated with this herbicide. Apply SURMISE™ exclusively to rice seed propagation fields in which the desired plants are glufosinate ammonium tolerant.

**THOROUGH SPRAY COVERAGE IS VERY IMPORTANT**

SURMISE™ works best when weeds are small and the crops and weeds are actively growing. Visual effects and control of rice susceptible segregates from SURMISE™ applications occur within 2 to 4 days after application under good growing conditions. The ability of SURMISE™ to eliminate rice plants not tolerant to SURMISE™ may be reduced when heavy dew, fog, or mist/rain is present on the crop or when the crop is under stress due to drought, cool temperatures, or extended periods of cloudiness.

Rice fields should be as level as possible and free of large clods to obtain uniform germination of rice and grassy weeds and to ensure uniform flood levels. If necessary, fields may be flushed prior to treatment. If fields are flushed prior to treatment, flush in sufficient time so that the rice and grass/broadleaf weeds are actively growing at time of treatment.

Do not allow spray to contact foliage or green tissue of desirable vegetation other than rice lines in which the desired plants are glufosinate ammonium tolerant. This product will injure any other green vegetation contacted by the spray.

**INSTRUCTIONS FOR SEED HANDLING STORAGE AND USE**

Seed from treated plants must be held in secured storage until used for breeding of glufosinate ammonium tolerant rice seed or destroyed. Seed from treated plants must be labeled as follows. **Do Not Use for Feed or Food Purposes. Store Away from Feed and Foodstuffs.** In addition, label the seed with the Seed Disposal statements found in the **Storage and Disposal** section of this label.

**RESTRICTIONS TO THE DIRECTIONS FOR USE**

1. **DO NOT** use nee any rice processed commodities or rice straw treated with SURMISE™ for food or feed consumption.
2. **DO NOT** exceed 80 fl. oz./A of SURMISE™ per growing season on rice being treated for segregate control in transgenic seed production fields.
3. **DO NOT** plant rotation crops in a field treated with SURMISE™ for 120 days after the last application of this product with the exception of wheat, barley, buckwheat, millet, oats, rye, sorghum and triticale which may be planted 70 days after the last application of this product.
4. **DO NOT** apply this product through any type of irrigation system.

### Rate Instructions and Timing for Seed Production

For the selection of susceptible rice segregates, SURMISE™ must be applied at 40 fl. oz./A when rice is in the 1- to 3-leaf stage of growth. A second treatment of 40 fl. oz./A must be applied 10 days later or up until the rice is in the mid-tillering state of growth.

- Do not exceed 80 fl. oz. (1.46 lbs. ai/A) per single application.
- Two applications can be made at 40 fl. oz. (0.73 lbs. ai/A) with a minimum 10-day re-treatment interval.
- Do not exceed 80 fl. oz. (1.46 lbs. ai/A) per year.
- Minimum paddy depth of 4 inches.
- If one application of 80 fl. oz. is made, the application must be made to a dry field. A minimum 7-day holding period after flooding of the field is required.
- If two applications are made, the first application must be made to a dry field.
- The second application may be made to a flooded field with a required 55 day holding period for a 4-inch paddy depth or a 30-day holding period for an 8-inch paddy depth.

### WATER MANAGEMENT

A sufficient portion of the target grassy weed plant must be exposed to SURMISE™ for satisfactory control to be achieved. Therefore, if necessary, lower or allow water to recede so that at least 75% of the weed foliage is exposed above the water level. Do not increase the water level for at least 48 hours following the application of SURMISE™. The water level may be brought back to normal level following this period.

### TANK MIX INSTRUCTIONS FOR SURMISE™ USE IN RICE SEED PROPAGATION

When using SURMISE™ in tank mix combinations, follow the precautions and directions of the most restrictive label for the appropriate timing rate and crop response information.

#### 1 Southern United States (Arkansas, Louisiana, Mississippi, Missouri, Texas)

To enhance weed control and/or provide residual control in rice SURMISE™ may be mixed with the following herbicides:

Arroso® 3.3E Herbicide

Londax® Herbicide

Stam® Herbicide

Basagran® Herbicide

Prowl® 3.3 EC Herbicide

Permit® Herbicide

Bolero® 8EC Herbicide

#### 2 California

To enhance weed control and/or provide residual control in rice, SURMISE™ may be mixed with the following herbicides.

Bolero® 8EC Herbicide

Stam® Herbicide

Londax® Herbicide

Super Wham® Herbicide

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## FALLOW FIELDS OR POST-HARVEST

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SURMISE™ may be used as a substitute for tillage in fallow fields to control or suppress weeds listed in the **Weed Control for Row Crops** section of this label. Applications may be made in fallow fields, post-harvest, prior to planting or emergence of any crop listed on this label.

Apply SURMISE™ at 22 or 29 fl. oz./A to fallow fields to control specific weeds. SURMISE™ must be applied with ammonium sulfate. Tank mixes with 2,4-D, glyphosate or atrazine are recommended with SURMISE™ to enhance total weed control. When using SURMISE™ in tank mix combinations, follow the precautions and directions of use of the most restrictive label. See the **Application and Mixing Procedures** section of this label for additional information on how to apply this product. See the **Information** section of this label for rotational crop restrictions.

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## FARMSTEADS, RECREATIONAL, AND PUBLIC AREAS

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When applied as listed, SURMISE™ controls undesirable plant vegetation in non-crop areas around farmstead building foundations, shelter belts, along fences, airports, commercial plants, storage and lumber yards, educational facilities, fence lines, ditch banks, dry ditches, schools, parking lots, tank farms, pumping stations, parks, other public areas and general non-selective farmstead weed control. Refer to the **Application Directions For Use on Listed Tree, Vine, and Berry Crops** section of this label for appropriate application broadcast and spot spray application rates and lists of weeds controlled.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Do not use or store near heat or open flame. Keep the container tightly closed and dry in a cool, well-ventilated place. Storage temperature should not exceed 125° F. If storage temperature for bulk SURMISE™ is below 32° F, the material should not be pumped until its temperature exceeds 32° F. Protect against direct sunlight.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### CONTAINER HANDLING:

#### **[Rigid, Non-refillable containers small enough to shake (i.e., with capacities equal to or less than 5 gallons)]**

Non-refillable container. Do not reuse or refill this container. Triple rinse container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Once container is rinsed, then offer for recycling, if available, or reconditioning, if appropriate, or 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.

#### **[All refillable container types (containers with capacities greater than 50 lbs.)]**

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. This is a sealed returnable container to be used only for SURMISE™. When this container is empty it must not be opened, cleaned, or discarded. Empty containers must be returned to the original purchase location.

#### **[Bottom discharge Intermediate Bulk Container (IBC) (containers with capacities greater than 50 lbs.)]**

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. Pressure rinsing the container before final disposal is the responsibility of the person disposing of the container. Empty the remaining contents from the Intermediate Bulk Container (IBC) into application equipment or mix tank. Raise the bottom of the IBC by 1.5 inch on the side which is opposite of the bottom discharge valve to promote more complete product removal. Completely remove the top lid of the IBC. Use water pressurized to at least 40 PSI to rinse all interior portions. Continuously pump or drain rinsate into application equipment or rinsate collection system while pressure rinsing. Continue pressure rinsing for 2 minutes or until rinsate becomes clear. Replace the lid and close bottom valve. Contact your Ag Retailer or Bayer CropScience for container return, disposal and recycling recommendations.

**SEED DISPOSAL:** To dispose of out of date or otherwise unmarketable seed from plants which have been treated with SURMISE™, broadcast and lightly incorporate seed into field soils using disc or other suitable implement. Any resulting crop may be destroyed by chemical or mechanical means. Alternatively, seed may be destroyed by deep burial incineration or landfill disposal.

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## IMPORTANT READ BEFORE USE

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Read the entire **Directions for Use Conditions, Disclaimer of Warranties, and Limitations of Liability** before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product user or buyer accepts the following **Conditions, Disclaimer of Warranties, and Limitations of Liability**.

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Albaugh, Inc. All such risks shall be assumed by the user or buyer.

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