

Agri Star®

SURMISE®

ACTIVE INGREDIENT

Glufosinate ammonium* 24.5%

Other Ingredients 75.5%

Total 100.0%

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

EPA Reg. No. 42750-258

EPA Est. No. 42750-MO-001

**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

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

IF IN THE EYES:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

IF SWALLOWED:

- Call a poison control center or doctor immediately for treatment advice.
- Do not give any liquid to the person.
- Do not induce vomiting unless told to do so by the poison control center or doctor.
- Do not give anything to an unconscious person.

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.

A non-selective herbicide for post emergence broadcast use on canola, corn, cotton, and soybean designated as LibertyLink®. 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 burndown application before planting or prior to emergence of any conventional or transgenic variety of canola, corn, cotton, 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.**



Albaugh®
Your Alternative™

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
WARNING**

Causes substantial but temporary eye injury. Harmful if absorbed through skin. Harmful if swallowed. Do not get in eyes, on skin, or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before use. Wear long-sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves (such as Natural Rubber). Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical resistant to this product are listed below.

Applicators and other handlers must wear

- Long sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate, butyl rubber ≥ 14 mils, or Viton[®] ≥ 14 mils
- Shoes and 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 products 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/PPE 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.

ENGINEERING CONTROL STATEMENT

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.

ENVIRONMENTAL HAZARDS

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.

DIRECTIONS FOR USE

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)

NON AGRICULTURAL USE REQUIREMENTS

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

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, corn, cotton, soybean or sugar beet.

Post emergence row crop applications of SURMISE® may be made only to crops tolerant to the active ingredient in this product. Albaugh, LLC does not warrant the use of this product on crops other than those designated as LibertyLink® to safely withstand the application of SURMISE®.

The basis of selectivity of SURMISE® in crops is the presence of a gene in LibertyLink crops which results in a plant that is tolerant to the active ingredient of SURMISE®. Crops not containing this gene will not be tolerant to SURMISE® and severe crop injury and/or death may occur. Do not allow spray to contact foliage or green tissue of desirable vegetation other than crops tolerant to the active ingredient in this product.

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

During applications to trees, vines and berries: Avoid contact of SURMISE® solution spray drift or mist with green bark stems or foliage, as injury may occur. 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.

PRODUCT INFORMATION

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 LibertyLink® canola, LibertyLink® corn, LibertyLink® cotton and LibertyLink® soybean and 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, corn, cotton, 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, LLC 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.

ROTATIONAL CROP RESTRICTIONS*

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, Corn, Cotton, 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

Maximum Weed Height or Diameter (inches)			Maximum Weed Height or Diameter (inches)		
Weed Species	22 fl. oz./A	29 fl. oz./A	Weed Species	22 fl. oz./A	29 fl. oz./A
Amaranth Palmer ²	NR	4	Morningglory smallflower ²	4	6
Anoda spurred	3	5	Morningglory tall ²	6	8
Beggarweed Florida	4	5	Mustard wild	4	6
Black medic	5	7	Nightshade black	4	6
Blueweed Texas	5	7	Nightshade eastern black	6	8
Buckwheat wild	6	7	Nightshade hairy	6	8
Buffalobur	6	7	Pennycress (stinkweed)	4	6
Burcucumber	6	10	Pigweed redroot ²	3	4
Catchweed bedstraw (cleavers)	2	4	Pigweed prostrate ²	3	4
Carpetweed	4	6	Pigweed spiny ²	3	4
Chickweed common	6	8	Pigweed smooth ²	3	4
Cocklebur common	6	14	Pigweed tumble ²	3	4
Copperleaf hophornbeam	4	6	Puncturevine	4	6
Cotton volunteer ¹	6	8	Purslane common	2	4
Croton tropic	3	5	Pusley Florida	S	3
Croton woolly	2	4	Ragweed common	6	10
Eclipta	4	6	Ragweed giant	6	12
Devil s claw	2	4	Senna coffee	4	6
Fleabane annual	6	8	Sesbania hemp	6	8
Galinsoga hairy	6	8	Shepherd s Purse	6	8
Galinsoga small flower	6	7	Sicklepod (java bean)	4	6
Groundcherry cutleaf	4	5	Sida prickly	4	5
Geranium cutleaf	4	6	Smartweed Pennsylvania	6	14
Hempnettle	4	6	Smellmelon	4	6
Horsenettle Carolina ³	2	4	Sowthistle annual	6	8
Jimsonweed	6	10	Soybeans volunteer ¹	6	8
Knotweed	3	5	Spurge prostrate	2	4
Kochia ²	4	6	Spurge_ spotted	2	4
Ladysthumb	6	14	Starbur bristly	4	6
Lambsquarters common ²	4	6	Sunflower common	6	14
Mallow common	4	6	Sunflower prairie	3	5
Mallow Venice	6	8	Sunflower volunteer	6	10
Marestail	S	6 - 12	Thistle Russian ³	S	6 - 12
Marshelder annual	4	6	Velvetleaf ²	3	4
Morningglory entireleaf ²	6	8	Waterhemp common ²	NR	5
Morningglory ivyleaf ²	6	8	Waterhemp tall ²	NR	5
Morningglory pitted ²	6	8			
Morningglory sharppod ²	2	4			

In cotton SURMISE® may be applied at 29 fl oz/A three times per year

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

S Indicates suppression

1 Volunteer Liberty Link crops from the previous season will not be controlled

2 For applications to corn tank mixing with atrazine may enhance weed control in this species

3 May require sequential applications for control

NR Not Recommended

Grass Weed Control

Maximum Weed Height or Diameter (inches)			Maximum Weed Height or Diameter (inches)		
Weed Species	22 fl oz/A	29 fl oz/A ^{ab}	Weed Species	22 fl oz/A	29 fl oz/A ^{ab}
Barley volunteer ³	3	4	Millet wild proso	6	7
Barnyardgrass	3	5	Millet proso volunteer	6	7
Bluegrass annual	3	5	Oat wild ²	3	4
Corn volunteer ¹	10	12	Panicum fall	3	5
Crabgrass large ²	3	5	Panicum Texas	4	6
Crabgrass smooth ²	3	5	Rice red	4	6
Cupgrass woolly	6	12	Rice volunteer ¹	4	6
Foxtail bristly	6	8	Sandbur field ²	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 ²	3	4	Sorghum volunteer	6	8
Goosegrass ³	2	3	Stinkgrass	4	6
Johnsongrass Seedling	3	5	Wheat Volunteer ²	4	5
Junglerice	3	5	Witchgrass	4	6

In cotton SURMISE® may be applied at 29 fl. oz./A three times per year.

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

S - Indicates suppression

¹ 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 to 21 days after the first application is recommended for controlling dense clumps of volunteer corn or rice

² For best control of yellow foxtail field sandbur crabgrass and wild oats treat prior to tiller initiation

³ A sequential application may be necessary for control

Biennial and Perennial Weeds**

Tank mix partners or sequential applications of SURMISE® as directed (22 fl. oz./A followed by 22 fl. oz./A) for control of the biennial and perennial weeds listed below:

Alfalfa	Clover, Alsike	Nutsedge, purple*
Artichoke, Jerusalem	Clover, red	Nutsedge, yellow*
Bermudagrass	Dandelion	Orchardgrass
Bindweed, field	Dock, smooth	Poinsetta, wild
Bindweed, hedge	Dogbane hemp*	Pokeweed
Bluegrass, Kentucky	Goldenrod gray*	Quackgrass*
Blueweed, Texas	Johnsongrass rhizome	Sowthistle, perennial
Bromegrass, smooth	Milkweed, common*	Thistle, bull
Burdock	Milkweed, honeyvine*	Thistle, Canada
Bursage, woolyleaf	Muhly, wirestem*	Timothy*
Chickweed Mouse ear	Nightshade, silverleaf	Wormwood, biennial

Suppression Only

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

APPLICATION AND MIXING PROCEDURES

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 insure 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®.

COMPATIBILITY TESTING

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.

MIXING INSTRUCTIONS

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.

CLEANING INSTRUCTIONS

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. 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

SPRAY DRIFT MANAGEMENT

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 may 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 needs to be familiar with and take into account the information covered in the *Aerial Drift Reduction Advisory Information*

AERIAL DRIFT REDUCTION INFORMATION

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 shall 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 down-wind 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 2-10mph. However many factors including droplet size and equipment type determine drift potential at any given speed. Applications need to 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 needs to 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

APPLICATION DIRECTIONS FOR BURNDOWN USE

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, or soybean. 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, 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 year 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 year total may not exceed 65 fl. oz./A including all application timings.
- **In canola, corn 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	In Season Applications (LibertyLink® varieties only)	Year Max
Cotton Use Pattern 1	29 fl. oz./A	2 applications at 22-29 fl. oz./A*	87 fl. oz./A
Cotton Use Pattern 2	30-43 fl. oz./A	1 application at 22-29 fl. oz./A*	72 fl. oz./A
Soybean Use Pattern	29-36 fl. oz./A	1 application at 22-29 fl. oz./A**	65 fl. oz./A
Canola Corn Sugar beets	29-36 fl. oz./A	None	36 fl. oz./A

* LibertyLink cotton OR with hooded sprayer for non LibertyLink varieties (see Cotton use directions)

** LibertyLink soybeans only (See Soybean use directions)

APPLICATION DIRECTIONS FOR USE ON SUGAR BEETS

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.
2. DO NOT apply more than 60 fl. oz./A of SURMISE® on the sugar beet crop per growing year
3. DO NOT apply SURMISE® within 60 days of harvesting sugar beets
4. 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
5. DO NOT graze the treated crop or cut for hay
6. DO NOT add surfactants Antifoams or drift control agents may be added if needed
7. DO NOT apply SURMISE® if sugar beets show injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.)
8. 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)
Shepard 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.

APPLICATION DIRECTIONS FOR USE ON CANOLA

Apply SURMISE® only to canola labeled as LibertyLink. Uniform thorough spray coverage is necessary to achieve consistent weed control.

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. For optimal yield early season weed removal is important.

Applications of SURMISE® on canola may be made from the cotyledon stage up to the early bolting stage of the canola. Slight discoloration of the canola may be visible after application. This effect is temporary and will not influence crop growth maturity or yield.

Apply SURMISE® at 22 fl. oz./A per application. A second application of SURMISE® may be needed to control weeds that have not yet emerged at the time of application.

RESTRICTIONS TO THE DIRECTIONS FOR USE ON CANOLA

- DO NOT use on canola in the states of Alabama, Delaware, Georgia, Kentucky, Maryland, New Jersey, North Carolina, South Carolina, Tennessee, Virginia and West Virginia.
- DO NOT apply more than two applications of SURMISE® per year. Sequential applications should be at least 10 days apart.
- DO NOT apply SURMISE® within 65 days of harvesting canola.
- DO NOT apply more than 44 fl. oz./A of SURMISE® per year.
- If SURMISE® was used in a burndown application no post emergence applications may be applied to the crop.
- DO NOT graze the treated crop or cut for hay.
- DO NOT apply SURMISE® if canola shows injury from prior herbicide applications or environmental stress (drought excessive rainfall, etc.).
- DO NOT apply this product through any type of irrigation system.
- Refer to the *Rotational Crop Restrictions* section under the Information heading of this label for the appropriate rotational crop plant back intervals.

SPRAY ADDITIVES

SURMISE® must be applied with ammonium sulfate (AMS). Use only fine feed grade or spray grade AMS at 3 pounds per acre. Anti foams or drift control agents may be added if needed. Use of additional surfactants or crop oils may increase risk of crop response.

CANOLA TANK MIX INSTRUCTIONS

SURMISE® at 22 fl. oz./A plus AMS may be used in tank mix combination with certain herbicides for improved control of larger than labeled grasses 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 canola 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. The AMS rate may be reduced to 1.5 lb/A when SURMISE® is tank mixed with a reduced rate of one of the grass herbicides specified below.

APPLICATION RATE AND TIMING FOR CANOLA FOR TRANSGENIC SEED PROPAGATION

Up to three applications of SURMISE® Herbicide at up to 22 fl oz/A per application may be made to canola for transgenic seed propagation. Applications may be made from the cotyledon stage up to the early bolting stage (e.g., BBCH 18 – 30, between just prior to stem elongation/bolting, eight or more leaves and beginning of stem elongation, no internodes).

RESTRICTIONS TO THE DIRECTIONS FOR CANOLA FOR TRANSGENIC SEED PROPAGATION

- DO NOT apply more than three applications of SURMISE® Herbicide at up to 22 fl oz/A per application per year.
- DO NOT apply more than 66 fl oz/A of SURMISE® Herbicide per year.
- DO NOT apply SURMISE® Herbicide beyond the early bolting stage or within 65 days of harvesting canola seed.
- DO NOT use treated canola seed for food, feed or oil purposes.
- DO NOT apply SURMISE® Herbicide if canola shows injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.).
- DO NOT apply this product through any type of irrigation system

TANK MIX PARTNERS FOR LIBERTY ON INVIGOR LIBERTYLINK CANOLA

Tank Mix Partner	Rate (fl oz./A)
Assure® II	4 - 5 fl. oz./A
Poast®	6 – 8 fl. oz./A
Select® 2EC	2 - 3 fl. oz./A
Select Max™	4 – 6 fl. oz./A

APPLICATION DIRECTIONS FOR USE ON FIELD CORN AND SILAGE CORN

Apply SURMISE® only to corn labeled as LibertyLink Uniform thorough spray coverage is necessary to achieve consistent weed control.

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 For optimal yield early season weed removal is important.

Applications of SURMISE® on corn may be made with over the top broadcast or drop nozzles from emergence until corn is 24 inches tall or in the V 7 stage of growth (i. e. 7 developed collars whichever comes first). For corn 24 inches to 36 inches tall only apply SURMISE® using ground application and drop nozzles and avoid spraying into the whorl or leaf axils of the corn stalks. Applications of SURMISE® following the use of soil applied insecticides will not injure corn.

Apply SURMISE® at 22 fl. oz./A per application. A second application of SURMISE® or a tank mix application with a residual herbicide will be needed to control weeds that have not yet emerged at the time of application.

RESTRICTIONS TO THE DIRECTIONS FOR USE ON FIELD CORN AND SILAGE CORN

- DO NOT apply SURMISE® within 60 days of harvesting corn forage and within 70 days of harvesting corn grain and corn fodder.
- DO NOT apply more than two applications of SURMISE® to the corn crop. Sequential applications need to be at least 10 days apart.
- DO NOT apply more than 44 fl. oz./A of SURMISE® on corn per growing year.
- 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.

SPRAY ADDITIVES

For corn and sweet corn SURMISE® must be applied with ammonium sulfate (AMS). It is recommended to use only fine feed grade or spray grade AMS at 3 lbs. per acre (17 lbs./100 gallons). When temperatures exceed 85° F the rate of AMS can be reduced to 1.5 lbs per acre (8.5 lbs./100 gallons) to reduce potential leaf burn.

Use of additional surfactants or crop oils may increase risk of crop response.

CORN TANK MIX INSTRUCTIONS

Certain herbicide tank mixes may aid in the performance of SURMISE®. 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 corn 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.

TANKMIX PARTNERS FOR SURMISE® ON LIBERTY LINK CORN

2,4-D	Halex GT	Pendimethalin ¹
acetochlor	Hornet® WDG	Permit®
Aim™ ²	Impact®	Python® WDG
Atrazine	Laudis®	s metolachlor ²
Callisto™	Lexai* ²	Spirit®
Camix® ²	Lumax® ²	Status®
Capreno®	Metolachlor ²	Yukon®
Distinct™	nicosulfuron	Zemax
Guardsman Max®	NorthStar™	

¹ Tankmixing with pendimethalin may result in reduced control of barnyardgrass fall panicum field sandbur yellow foxtail and volunteer corn

² It is recommended that these products are tankmixed at half the use rate with Liberty herbicide to reduce risk of crop response. It is recommended that these products are tank mixed at 1/2 the use rate with Liberty Herbicide to reduce risk of crop response.

CORN INSECTICIDE TANK MIX PARTNERS FOR SURMISE®

To provide weed and insect control in corn, SURMISE® may be mixed with the following insecticides.

Ambush® Insecticide	Tombstone™ Helios®	Pounce® 3 2EC Insecticide
Asana® XL Insecticide	Lorsban® 4E Insecticide	Warrior™ Insecticide
Baythroid®XL Insecticide	Tombstone™	

APPLICATION DIRECTIONS FOR USE ON COTTON

Uniform thorough spray coverage is necessary to achieve consistent weed control. SURMISE® may be applied as a broadcast over the top post emergence spray or as a directed spray only to LibertyLink cotton. This product may be applied post emergence to non LibertyLink cotton varieties or cultivars by using equipment designed to minimize contact of the spray with the cotton foliage. See the Application Methods on Non LibertyLink Cotton section for selection of shielding equipment. Severe injury or death may result if the SURMISE® contacts the foliage or stems of cotton NOT labeled as LibertyLink.

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. For optimal yield, early season weed removal is important.

Apply SURMISE® to cotton from emergence up to the early bloom stage at 22 to 29 fl. oz./A. Should environmental conditions prevent a timely herbicide application a single application of up to 43 fl. oz./A of SURMISE® may be made to cotton. If more than 29 fl. oz./A are used in any single application the yearly total may not exceed 72 fl. oz./A including all application timings. See Restrictions to the Directions for use on Cotton below for additional information.

Refer to the Weed Control Table for Row Crops section of this label for selection of the proper rate dependent upon weed species present and size. In weed populations with mixed species select the highest rate required to control all the species. Volunteer LibertyLink crop plants (corn, rice, cotton, soybeans, sugar beets) from the previous season will not be controlled by applications of SURMISE®. A repeat application of SURMISE® or tank mixes with a residual herbicide will be needed to control weeds that have not emerged at the time of application. See the Tank Mix Instructions for Use on Cotton to select suitable tank mix partners.

Use Pattern	1st Application	2nd Application	3rd Application	Year Maximum
Option 1	22 - 29 fl. oz./A	22 - 29 fl. oz./A	22 - 29 fl. oz./A	87 fl. oz./A
Option 2	30 - 43 fl. oz./A	22 - 29 fl. oz./A	None	72 fl. oz./A

RESTRICTIONS TO THE DIRECTIONS FOR USE ON COTTON

- DO NOT apply SURMISE® to cotton in Florida South of Tampa (Florida Route 60) or in Hawaii except for test plots or breeding nurseries.
- DO NOT apply SURMISE® within 70 days prior to cotton harvest.
- Up to three applications of SURMISE® may be made to cotton per year at a maximum application rate of 29 fl. oz./A.
- DO NOT apply more than 87 fl. oz. (including all application timings) to cotton per year under this application scenario. Sequential applications need to be at least 10 days apart.
- If environmental conditions prevent timely applications resulting in large weeds or heavy infestations a single application of SURMISE® at up to 43 fl. oz./A may be made to cotton.
- DO NOT apply more than 43 fl. oz. of SURMISE® in a single application under this use scenario. If a single application greater than 29 fl. oz. is made a subsequent application not to exceed 29 fl. oz. may be made to cotton. The yearly total use rate under this scenario may not exceed 72 fl. oz. of SURMISE®. Sequential applications need to be at least 10 days apart.
- DO NOT apply this product through any type of irrigation system.
- Refer to the Rotational Crop Restrictions section under the Information heading of this label for the appropriate rotational crop plant back intervals.

APPLICATION METHODS TO LIBERTYLINK COTTON

Refer to the Weed Control Table for Row Crops to select the proper application rate based upon the weeds present and their size. Uniform and thorough spray coverage is required to achieve consistent weed control. For ground application apply SURMISE® to LibertyLink cotton as an over the top foliar spray or as a spray directed to the lower one third of the cotton stand.

APPLICATION METHODS TO NON LIBERTYLINK COTTON

Application of SURMISE® to cotton varieties not labeled as LibertyLink requires the use of hooded spray equipment designed to minimize exposure of the spray to the cotton stand. A hooded sprayer directs the spray onto weeds while shielding the cotton stand from contact. Use nozzles that provide uniform coverage within the treated area. Keep hoods on these sprayers adjusted to protect desirable vegetation. Extreme care must be exercised to avoid exposure of the desirable vegetation to the spray.

With a hooded sprayer the spray pattern is completely enclosed on the top and all 4 sides by a hood thereby shielding the crop from the spray solution. This equipment must be set up and operated in a manner that avoids bouncing or raising the hoods off the ground in any way. The spray hoods must be operated on the ground or skimming across the ground. Tractor speed must be adjusted to avoid bouncing of the spray hoods. Avoid operation on rough or sloping ground where the spray hoods might be raised off the ground. If the hoods are raised spray particles may escape and come into contact with the cotton causing damage or destruction of the crop.

Herbicide rates and spray volume Instructions are presented as broadcast equivalents and must be reduced in proportion to the area actually treated. Use the following formulas to calculate the correct rate and volume per planted (field) acre.

Band width in inches	X	Broadcast RATE per acre	=	Amount of banded product needed per acre
Row width in inches				

Band width in inches	X	Broadcast spray VOLUME per acre	=	Banded spray volume needed per acre
Row width in inches				

POST HARVEST

SURMISE® may be applied as a post-harvest burndown treatment to fields (after cotton harvest). Up to 43 fl. oz./A of SURMISE® may be applied in a single application to control larger weeds growing in the crop at the time of harvest.

If more than 29 fl. oz./A is used in a single application the yearly total may not exceed 72 fl. oz./A including all application timings. Refer to the *Rotational Crop Restrictions* section of this label for appropriate rotational crop information.

COTTON TANK MIX INSTRUCTIONS

Certain tank mixes may aid in the performance of SURMISE®. 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 cotton 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.

LibertyLink Cotton For cotton tolerant to SURMISE® Dual Magnum® or Staple® Herbicide may be tank mixed with SURMISE® and applied over the top post emergence to enhance weed control and/or provide residual control.

All Cotton Types The following herbicides may be mixed with SURMISE® for hooded spray application to enhance weed control and/or provide residual weed control.

POSTEMERGENCE OVER THE TOP TANK MIX PARTNERS FOR SURMISE® ON LIBERTY LINK COTTON

Assure II	metolachlor	clethodim
Poast Plus	Fusilade DX	Select Max
Fusion	Staple	

APPLICATION DIRECTIONS FOR USE ON SOYBEANS,

Apply SURMISE® only to soybean designated as LibertyLink. Uniform thorough spray coverage is necessary to achieve consistent weed control.

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. Adding ammonium sulfate with SURMISE® may improve weed control if weeds are under stress. For optimal yield early season weed removal is important.

Applications of SURMISE® on soybeans may be made from emergence up to but not including the bloom growth stage.

Apply SURMISE® to LibertyLink soybeans from emergence up to but not including the bloom growth stage at 22 to 29 fl. oz./A. See weed chart to determine rate. Should environmental conditions prevent a timely herbicide application, a single application of up to 36 fl. oz./A of SURMISE® may be made to soybeans followed by one additional application at a maximum of 29 fl. oz./A with a yearly maximum of 65 fl. oz./A. SURMISE® may be applied alone or in a tank mix application with a residual herbicide to control weeds that have not yet emerged at the time of application.

Although timely post applications of SURMISE® can provide complete weed control, residual herbicides at burndown planting or tank mixed with SURMISE® help ensure optimal weed management particularly if environmental conditions delay timely post applications. Residual herbicides can also reduce early season weed competition and are a key element of good weed resistance management practices.

Use Pattern Rate Ranges		
1st Application	2nd Application	Year Maximum
22 - 36 fl. oz./A	22 - 29 fl. oz./A	65 fl. oz./A

RESTRICTIONS TO THE DIRECTIONS FOR USE ON SOYBEANS

- DO NOT apply SURMISE® within 70 days of harvesting soybean seed.
- DO NOT apply more than 65 fl oz/A of SURMISE® on soybeans per growing year.
- DO NOT apply more than 36 fl oz/A of SURMISE® in a single application.
- DO NOT graze the treated crop or cut for hay.
- DO NOT use nitrogen solutions as spray carriers. A silicone based antifoam agent may be added if needed.
- DO NOT apply SURMISE® if soybeans show injury from prior herbicide applications or environmental stress (drought excessive rainfall etc.).
- DO NOT apply this product through any type of irrigation system.
- Refer to the *Rotational Crop Restrictions* section under the Information heading of this label for the appropriate rotational crop plant back intervals.
- Sequential applications need to be at least 5 days apart.

SOYBEAN TANK MIX INSTRUCTIONS

Certain herbicide tank mixes may complement SURMISE®. 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 soybean 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.

TANKMIX PARTNERS FOR SURMISE® IN LIBERTYLINK SOYBEANS

Assure® II	Fusion®	Raptor™
Classic®	Harmony® GT	Reflex®
Clethodim	Optill	Resource®
Cobra®	metolachlor	Select Max®
Fierce	Phoenix™	Sharpen
FirstRate®	Poast Plus®	Synchrony® XP
Flexstar®	Prefix	Ultra Blazer®
Fusilade® DX	Pursuit®	

APPLICATION DIRECTIONS FOR CANOLA, CORN, COTTON, AND SOYBEAN SEED PROPAGATION

SURMISE® may be applied to select out susceptible segregates i. e. canola, corn, cotton and soybean plants that are not tolerant to glufosinate ammonium during seed propagation.

- Canola - SURMISE® may also be used in canola seed propagation as a foliar spray to selectively eliminate canola plants that do not carry a gene that imparts tolerance to glufosinate ammonium and as such can be applied to remove susceptible segregates during canola seed propagation. Breeding material not possessing the glufosinate ammonium tolerance gene will be severely injured or killed if treated with this herbicide. See *Application Use Directions for Use on Canola* for use rates and application timing.
- Corn Inbred - lines plants not possessing glufosinate ammonium tolerance will be severely injured or killed if treated with this herbicide. A hooded sprayer may be used to protect plants from coming into contact with the herbicide application. For the selection of tolerant corn segregates SURMISE® may be applied at 22 fl. oz./A plus AMS at 3 lb./A (17 lb./100 gallons) when corn is in the V 3 to V-4 stage of growth i. e. 3 to 4 developed collars. A second treatment of 22 fl. oz./A plus AMS at 3 lbs./A may be applied when the corn is in the V 6 to V 7 stage of growth or up to 24" tall. Sequential applications should be at least 10 days apart. When temperatures exceed 85° F the rate of AMS can be reduced to 1.5 lbs./A (8.5 lbs./100 gallons) to reduce potential leaf burn.
- Cotton - SURMISE® may also be used in cotton seed propagation as a foliar spray to selectively eliminate cotton plants that do not carry a gene that imparts tolerance to glufosinate ammonium and as such can be applied to remove susceptible segregates during cotton seed propagation. Breeding material not possessing the glufosinate ammonium tolerance gene will be severely injured or killed if treated with this herbicide. See *Application Use Directions for Use on Cotton* for use rates and application timing.
- Soybeans - For the selection of tolerant soybean segregates SURMISE® may be applied at up to 22 to 36 fl. oz./A when soybean is in the third trifoliolate stage. A second treatment of 22 to 29 fl. oz./A may be applied up to but not including the bloom growth stage of soybean. Sequential applications should be at least 5 days apart.

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

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.

Weeds Controlled in Tree Vine and Berry Crops

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

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

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

(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	Princep® 4L	Sinbar® 80W
Devrinol® 50WP	Simazine 4L	Solicam® DF
Goal® 1.6E	Simazine 80W	Surflan® A S
Karmex® DF	Simazine 90	

APPLICATION DIRECTIONS FOR POTATO VINE DESICCATION

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 year.
- 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.

FALLOW FIELDS OR POST HARVEST

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 Product Information section of this label for rotational crop restrictions.

NON-CROP USES

SURMISE® Herbicide controls annual and perennial weeds in non-crop areas. Applications may be made on a broadcast, banded or spot treatment basis depending on the situation. 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 treatments may be necessary to control plants generating from underground parts or seed.

WHEN TO APPLY

SURMISE® Herbicide is a foliar-active material. Best results are obtained when weeds are actively growing. 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 of the highest rate directed.

SURMISE® Herbicide must be applied at the labeled rate in the HOW TO APPLY section. Repeat applications of SURMISE® Herbicide or tank mixes of SURMISE® Herbicide plus one or more appropriate residual herbicide(s) listed on this label will be needed to control weeds emerging from underground parts or seeds.

HOW TO MIX

SURMISE® Herbicide must be mixed with water to make finished spray solution as follows:

1. Fill the spray tank with the required amount of water.
2. Add the proper amount of product, then mix thoroughly.

USE RESTRICTIONS FOR NON-CROP USE

1. DO NOT apply this product through any type of irrigation system.
2. DO NOT apply directly to or allow drift to contact desirable green tissue or green, thin, or uncalloused bark of desirable vegetation.
3. DO NOT allow grazing of vegetation treated with this product.

HOW TO APPLY

Spot or Directed Applications

This product may be used as a spot or directed spray application using 0.4 to 0.75 fluid ounces of product per gallon of water depending upon the weed and stage of growth as shown in the following sections. Spray undesirable vegetation foliage on a spray-to-wet basis. Do not apply beyond runoff. Ensure uniform and complete coverage. Use a coarse spray. Do not spray during windy conditions. Backpack, pump-up, and hydraulic sprayers may be used. Thoroughly clean the sprayer following use.

Broadcast or Boom Applications

Apply 12.0 to 38.0 fluid ounces per acre depending upon the weed and stage of growth as shown in the following sections. Use a minimum of 40 gallons of water per acre with a minimum of 30-psi spray pressure.

Aerial Applications

Apply as a foliar treatment using a minimum of 5 gallons of water per acre to ensure thorough coverage. Do not apply when winds are gusty or under conditions which favor drift on to desirable vegetation. Applications under conditions which cause drift of this product will result in damage to any vegetation contacted. Drift control additives may be used. If a drift control additive is used, observe and follow all directions and precautions as specified on the additive label.

Tank Mix Directions for Non-crop Uses

SURMISE® Herbicide is compatible in tank mixes with many other herbicides including non-selective herbicides such as glyphosate. Follow the more restrictive label limitations and use precautions for each product. No label dosage rates can be exceeded.

Tank mix applications of SURMISE® Herbicide plus the following herbicides are recommended for broad-spectrum postemergence and pre-emergence weed control:

Arsenal® Herbicide	Factor® Herbicide	Predict Herbicide®
Barricade® 65WG Herbicide	Gallery® 75 Dry Flowable	Vanquish®
Endurance® Herbicide	Pendulum® WDG Herbicide	Ronstar® WSP
Surflan® A.S. Specialty Herbicide		

A compatibility test must be conducted with any potential tank mix partner with SURMISE® Herbicide, except with any one of those listed above. Using a clear glass quart jar, conduct the test as described below:

1. Fill the jar three-quarters full with water.
2. Add the appropriate amount of herbicide in the following order: (a) dry flowable, (b) wettable powder, (c) aqueous suspensions, (d) flowables, (e) liquids and (f) solutions and emulsifiable or liquid concentrates. Shake or gently stir jar after each addition to thoroughly mix.
3. After adding all ingredients, let the mixture stand for 15 minutes and then look for separation, large flakes, precipitates, gels, and heavy oily film on the jar or other signs of incompatibility.
4. If the compatibility test shows signs of incompatibility, do not tank mix the product tested with SURMISE® Herbicide.

For the Following Weeds Controlled by SURMISE® Apply:

Spot application:

Apply 0.75 fluid ounces per gallon of water when the weed height or diameter is less than 6 inches.
Apply 1.25 fluid ounces per gallon of water when the weed height or diameter is 6 inches or greater.

Broadcast application:

Apply 1.25 quarts per acre when the weed height or diameter is less than 6 inches.
Apply 1.75 quarts per acre when the weed height or diameter is 6 inches or greater.

Broadleaf Weeds

chickweed	jimsonweed	marestail
clover	kochia	purslane
common cocklebur	London rocket	shepherdspurse
filaree	maiva (little mallow)	smartweed

Grasses and Sedges

barnyardgrass	green foxtail	(signal grass)
cupgrass	Johnsongrass (rhizome)	stinkgrass
fall panicum	lovegrass	windgrass
giant foxtail	shattercane	yellow foxtail
goosegrass	smallflower Alexandergrass	

For the Following Weeds Controlled by SURMISE® Apply:

Spot application:

Apply 1.25 fluid ounces per gallon of water when the weed height or diameter is less than 6 inches.
Apply 1.75 fluid ounces per gallon of water when the weed height or diameter is 6 inches or greater.

Broadcast application:

Apply 1.75 quarts per acre when the weed height or diameter is less than 8 inches tall.
Apply 2.5 quarts per acre when the weed height or diameter is 8 inches or greater.

Broadleaf weeds

Annual sowthistle	Lambsquarter	Tansy mustard
Bindweed	leafy spurge	Velvetleaf
Buffalorburr	mugwort	Vervain
Burdock	musk thistle	Virginia copperleaf
Canada thistle	nettle	White heath aster
Curly dock	nightshade	Wild buckwheat
Dandelion	pennycress	Wild mustard
Dogbane (hemp)	pigweed, red root	Wild onion
Field growwell	plantain	Wild rose
Fleabane	prickly lettuce	Wild turnip
Goldenrod	ragweed	Wood sorrel
Horsetail	Russian thistle	yellow rocket

Grasses and Sedges

annual bluegrass	downy brome	Ryegrass
bahiagrass	fescue	Sandbur
barley	guineagrass	Smooth brome
Bermudagrass	Kentucky bluegrass	Torpedograss
carpetgrass	Nutsedge	vaseygrass
crabgrass	Paragrass	wheat
dallisgrass	Quackgrass	wild oat

Addition Use Directions

1. Use higher rates within the directed rate range for plant sizes listed when vegetation cover is dense or when weeds are growing under stressed conditions such as drought or when average temperatures are below 50°F.
2. The addition of 8.5 to 17 pounds of ammonium sulfate (spray grade) per 100 gallons of water (1 to 2% by weight) or 2 to 4 pounds of ammonium sulfate per acre may improve the level of weed control.

Use on Woody Species (Not For Use in California)

When applied as labeled, SURMISE® will provide control, partial control, or suppression of certain perennial woody weed species. Apply 2 to 6 quarts per acre. Use the higher specified rates per acre of this product when conditions are not optimum for spray penetration, such as when vegetation growth is heavy or dense. Lower specified rates may be used when the target species is a conifer and when vegetation growth conditions allow for uniform spray coverage.

Blackberry	<i>Rubus</i> spp
Deer brush	<i>Ceanothus integerrimus</i>
Douglas fir	<i>Pseudotsuga menziesii</i>
Gallberry	<i>Ilex</i> spp.
Hazel	<i>Corylus</i> spp.
Honeysuckle	<i>Lonicera</i> spp.
Huckleberry	<i>Gaylussacia</i> spp.
Maple	<i>Acer</i> spp.
Multiflora rose	<i>Rosa multiflora</i>
Oak	<i>Quercus</i> spp.
Pine	<i>Pinus</i> spp.
Poison ivy	<i>Toxicodendron radicans</i>
Poison oak	<i>Toxicodendron toxicarium</i>
Roundleaf greenbrier	<i>Smilax rotundifolia</i>
Salmonberry	<i>Rubus spectabilis</i>
Sweet gum	<i>Liquidambar styraciflua</i>
Sumac	<i>Rhus</i> spp
Thimbleberry	<i>Rubus parviflorus</i>
Trumpet creeper	<i>Campsis radicans</i>
Vine maple	<i>Acer circinatum</i>
Western red cedar	<i>Thuja plicata</i>

WHERE TO APPLY

Trimming and Edging

SURMISE® Herbicide may be used for trimming and edging landscape areas such as: around individual trees and shrubs, landscape beds, foundations, fences, driveways, paths, and parking areas; also on golf courses along cart paths, around sign and light posts, and around sand traps. For control of weeds emerging from seed, the use of SURMISE® Herbicide in a tank mix with preemergence herbicides is recommended. If spraying in areas adjacent to desirable plants, use a shield made of cardboard, plywood, or sheet metal while spraying to help prevent spray from contacting foliage of desirable plants. Refer to the How to Apply section of this labeling for appropriate application rates to control specific weeds.

Recreational and Public Areas

When applied as a spot or directed spray application, this product controls annual and perennial weeds listed on this label in areas such as: 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 nonfood crop areas. Refer to the How to Apply section of this labeling for appropriate application rates to control specific weeds.

Dormant Bermudagrass

SURMISE® Herbicide may be used to control winter annual weeds in well-established ornamental dormant hybrid or common Bermudagrass. Apply only when the turf is fully dormant and prior to spring green-up or severe turfgrass injury or delayed green-up may occur. For best results, apply SURMISE® Herbicide at a rate of 1.25 to 2.5 quarts per acre after most weeds have germinated and are in an early growth stage. Refer to the Weeds Controlled by SURMISE® Herbicide section of this label for selecting specified rates. Applications of SURMISE® Herbicide may also be used to suppress or control undesirable biennial or perennial weeds. Do not apply more than 2.5 quarts of SURMISE® Herbicide per acre per year for this use. Avoid high volume and spot applications where spray volume exceeds 80 gallons per acre or injury or delayed green-up may occur.

Ornamentals and Christmas Trees

When applied as specified by this label, this product may be used for the control of undesirable vegetation in site preparation prior to planting, around and within shade and greenhouses, and as a directed spray around containers and field-grown established ornamentals and Christmas trees.

DO NOT apply directly to or allow drift to contact desirable green tissue or green, thin, or uncalloused bark of desirable vegetation or injury may result.

DO NOT apply SURMISE® Herbicide as an over-the-top broadcast spray in ornamentals and shade or Christmas trees.

Directed spray application:

SURMISE® Herbicide may be applied as a directed spray to control in-row weeds in field-grown woody plants. Refer to the How to Apply section of this labeling for appropriate application rate to control specific weeds. This product may also be used between and around containers and in site preparation for new planting.

Site preparation application:

This product may be used for pre-plant site preparation for the control of annual and perennial weeds listed on this label, in ornamental and Christmas tree plantings. Ornamentals and Christmas trees may be planted into the treated area after the restricted entry interval (REI) of 12 hours has elapsed. Refer to the How to Apply section of this labeling for appropriate application rates to control specific weeds.

Greenhouse and shade house applications:

SURMISE® Herbicide may be used to control weeds in greenhouses and shade-houses. Air circulation fans must be turned off during application. Apply SURMISE® Herbicide as a directed spray, using large droplet and low-pressure type nozzles. Avoid drift and direct contact with desirable vegetation. Do not use in greenhouses or shade houses containing edible crops.

FARMSTEADS, RECREATIONAL, AND PUBLIC AREAS

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 nonselective 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 Albaugh 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.

IMPORTANT READ BEFORE USE

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, LLC All such risks shall be assumed by the user or buyer.

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