

SURMISE® 5

SPECIMEN LABEL

ACTIVE INGREDIENT

Glufosinate ammonium*	45.9%
Other Ingredients	54.1%
Total	100.0%

*Liquid soluble concentrate containing 4.6 pounds of active ingredient per U. S. gallon

KEEP OUT OF REACH OF CHILDREN / MANTENER FUERA DEL ALCANCE DE LOS NIÑOS CAUTION/PRECAUCIÓN

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) is acceptable.

See inside booklet for complete First Aid, Precautionary Statements, Directions For Use, Storage and Disposal, and Conditions of Sale and Warranty.

For 24-hour chemical spill, leak, fire, exposure or accident response information, call CHEMTREC toll free at 1-800-424-9300.

Para obtener información sobre respuesta a derrames, fugas, incendios, exposición o accidentes químicos las 24 horas, llame a CHEMTREC al número gratuito 1-800-424-9300.

A non-selective herbicide for post emergence broadcast use on canola, corn, cotton, and soybean designated as Glufosinate resistant. SURMISE® 5 may be used for weed control in non-Glufosinate resistant cotton when applied with a hooded sprayer in-crop. SURMISE® 5 may be applied as a broadcast burndown application before planting or prior to emergence of any variety of canola, corn, cotton, soybean or sugar beet. SURMISE® 5 may be used for post emergence weed control in listed tree vine and berry crops. SURMISE® 5 may also be applied for potato vine desiccation.

Manufactured by:
ALBAUGH, LLC

1525 NE 36th Street, Ankeny, IA 50021



**NON-SELECTIVE
HERBICIDE**

EPA Reg. No. 42750-401
AD121824

ALBAUGH®
your alternative

FIRST AID / PRIMEROS AUXILIOS

IF SWALLOWED / SI SE INGIERE:	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • DO NOT induce vomiting unless told to do so by a poison control center or doctor. • DO NOT give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING / SI ESTÁ EN LA PIEL O EN LA ROPA:	• Llame inmediatamente a un centro de control de envenenamientos o a un médico para consejo de tratamiento. • Si la persona puede tragar, haga que tome pequeños sorbos de agua. • NO induzca el vómito a menos que así se lo indique un centro de control de envenenamientos o un médico. • NO administre nada por vía oral a una persona inconsciente.
IF IN THE EYES / SI ENTRA EN CONTACTO CON LOS OJOS:	• 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.
HOT LINE NUMBER: Have the product container or label with you when calling a poison control center or doctor or going for treatment. For non-emergency exposure information on this product, call 1-888-347-6732 (7 days/week, 24-hr). For medical emergencies, dial 911. NÚMERO DE LÍNEA DIRECTA: Cuando llame a un centro de control de envenenamientos, o a un médico, o intente obtener tratamiento, tenga a la mano el envase o la etiqueta del producto. Para información no emergencia sobre este producto, llame al 1-888-347-6732. Para emergencias médicas, llame al 911. 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. NOTA AL MÉDICO: Si este producto se ingiere, se debe realizar una intubación endotraqueal y un lavado gástrico lo antes posible, seguido de la administración de carbón y sulfato de sodio.	

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION/PRECAUCIÓN. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. 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 reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers/Loaders/Applicators and other handlers must wear:

- Long-sleeved shirt and long pants, socks, shoes, and waterproof gloves (including Natural Rubber).
- Wear protective eyewear (goggles, face shield, or safety glasses).

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.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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.

DECLARACIONES DE PRECAUCIÓN

RIESGOS PARA LOS SERES HUMANOS Y ANIMALES DOMÉSTICOS

PRECAUCIÓN. Dañino si se ingiere. Causa irritación moderada en los ojos. No permita que caiga en los ojos, la piel o la ropa. Lávese con abundante agua y jabón luego de manipular los pesticidas y antes de comer, beber, masticar chicle, usar tabaco, o ir al baño. Quítese y lave la ropa contaminada antes de reutilizarla.

EQUIPO DE PROTECCIÓN PERSONAL (PPE, por sus siglas en inglés)

Las personas que mezclan, cargan, aplican y who may be exposed to the concentrate must otros manipuladores que pueden estar expuestos wear:" al producto concentrado deben usar:

- Camisa de manga larga y pantalones largos, zapatos y calcetines (medias), guantes impermeables (incluyendo goma natural)

Deseche la ropa y otros materiales absorbentes que hayan sido empapados o muy contaminados con el concentrado de este producto. **NO** vuelva a reutilizarlos. Siga las instrucciones del fabricante para la limpieza/mantenimiento del equipo de protección personal (PPE, por sus siglas en inglés). En caso de no existir dichas instrucciones de lavado, utilice detergente y agua caliente. Mantenga y lave el PPE separadamente de otra ropa para lavar.

RECOMENDACIONES DE SEGURIDAD PARA EL USUARIO

- Los usuarios deben quitarse inmediatamente la ropa/equipo de protección personal (PPE) si el pesticida penetra o ingresa a los mismos. Luego deben lavarse muy bien y ponerse ropa limpia.
- Los usuarios deben quitarse inmediatamente el equipo de protección personal (PPE) luego de manipular este producto. Lave el exterior de los guantes antes de quitárselos. Tan pronto sea posible, lávese muy bien y póngase ropa limpia.

DECLARACIÓN DE CONTROL DE INGENIERÍA

Cuando los manipuladores utilizan sistemas cerrados, cabinas o aviones de una manera que cumpla con los requisitos enumerados en la Norma de protección del trabajador (WPS) para pesticidas agrícolas [40 CFR 170.240(d) (4-6)], los requisitos del PPE del manipulador pueden reducirse o modificarse como se especifica en la 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 or rinsate.

This pesticide is toxic to vascular plants and must 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 including 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 advised.

PHYSICAL OR CHEMICAL HAZARDS

DO NOT mix or allow coming in contact with oxidizing agents. Hazardous chemical reaction may occur.

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.

PELIGROS AMBIENTALES

NO aplique directamente a cuerpos de agua, en áreas donde haya aguas superficiales, o en áreas intermareales que se encuentren bajo el nivel de altura máxima promedio del agua. No contamine cuerpos de agua cuando disponga de las aguas de lavado de equipo o aguas de enjuague.

Este pesticida es tóxico para las plantas vasculares y debe usarse estrictamente de acuerdo con las precauciones de deriva y escorrentía indicadas en esta etiqueta para minimizar las exposiciones fuera del sitio.

Bajo algunas condiciones, este producto puede tener el potencial de escurrirse hacia aguas superficiales o terrenos adyacentes. Cuando sea posible, utilice métodos que reduzcan la erosión del suelo, incluida la labranza cero, labranza limitada y arado en curvas de nivel. Estos métodos también reducen la escorrentía de pesticidas. Se recomienda el uso de franjas de filtro de vegetación a lo largo de ríos, arroyos, humedales, etc. o en el lado cuesta abajo de los campos donde podría ocurrir escorrentía para minimizar la escorrentía de agua.

PELIGROS FÍSICOS O QUÍMICOS

NO mezcle ni permita que entre en contacto con agentes oxidantes. Puede ocurrir una reacción química peligrosa.

INSTRUCCIONES DE USO

Es una violación de la ley federal utilizar este producto de manera inconsistente con lo indicado en su etiqueta.

NO utilice este producto hasta que haya leído toda la etiqueta. **NO** aplique este producto de manera que entre en contacto con trabajadores u otras personas, ya sea directamente o por deriva. Sólo los manipuladores protegidos pueden estar en el área durante la aplicación. Para cualquier requisito específico de su estado o tribu, consulte a la agencia responsable de la regulación de pesticidas.

Sólo en el estado de Nueva York: no apto para uso en los condados de Nassau y Suffolk.

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 following exceptions:

- REI for workers engaged in scouting activities in corn, canola, and soybeans is 4 days.
- The REI for workers to move irrigation piping is 7 days for all crops.

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, including plants, soil, or water, is: coveralls worn over short-sleeved shirt and short pants; chemical resistant gloves including 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).

REQUISITOS DE USO AGRÍCOLA

Utilice este producto solo de acuerdo con su etiqueta y el Estándar para la Protección del Trabajador Agrícola (WPS, por sus siglas en inglés), 40 CFR Parte 170. Esta ley contiene los requisitos para la protección de los trabajadores agrícolas en granjas, bosques, viveros e invernaderos, y para las personas que manipulan pesticidas agrícolas. Contiene requisitos para la capacitación, descontaminación, notificación y asistencia de emergencia. También contiene instrucciones específicas y excepciones relacionadas con las indicaciones en esta etiqueta acerca del equipo de protección personal (PPE, por sus siglas en inglés), y el intervalo de ingreso restringido. Los requisitos en esta sección de la etiqueta (requisitos para uso agrícola) aplican únicamente a los usos de este producto que están cubiertos por el Estándar para la Protección del Trabajador Agrícola.

NO ingrese ni permita la entrada de trabajadores a las áreas tratadas durante el intervalo de entrada restringida (REI) de 12 horas con las siguientes excepciones:

- El REI para trabajadores dedicados a actividades de exploración en maíz, canola y soja es de 4 días.
- El REI para que los trabajadores muevan tuberías de riego es de 7 días para todos los cultivos.

El EPP requerido para el ingreso temprano a áreas tratadas que está permitido según el Estándar de Protección del Trabajador y que involucra contacto con cualquier cosa que haya sido tratada, incluidas plantas, tierra o agua, es: mono usado sobre camisa de manga corta y pantalones cortos; guantes resistentes a productos químicos que incluyen barrera laminada, caucho de butilo ≥ 14 mils, caucho de nitrilo ≥ 14 mils, caucho de neopreno ≥ 14 mils, cloruro de polivinilo (PVC) ≥ 14 mils o Viton® ≥ 14 mils; calzado resistente a productos químicos y calcetines; gafas protectoras (gafas protectoras, careta o gafas de seguridad).

IMPORTANT CROP SAFETY INFORMATION READ BEFORE USING THIS PRODUCT

This product may be applied as a **burndown treatment prior to planting or prior to emergence** of any variety of canola, corn, sweet corn*, cotton, olive, soybean or sugar beet. This product may be applied to cotton not sensitive to the active ingredient in this product using a hooded sprayer.

*Not Registered for Use By California

Post emergence row crop applications of this product may be made only to crops designated as Glufosinate resistant. To the extent consistent with applicable law, Albaugh LLC does not warrant the use of this product over the top on crops other than those designated as Glufosinate resistant and designed to safely withstand the application of this product.

The basis of selectivity of this product in crops is the presence of a gene which results in a plant that is resistant to the active ingredient in this product. Crops not containing this gene will be susceptible to this product, and severe crop injury and may occur. **DO NOT** allow spray to contact foliage or green tissue of desirable vegetation other than crops resistant to the active ingredient in this product.

Applications to trees, vines and berries must avoid contact of this product 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 may be sprayed unless protected from spray contact by nonporous wraps, grow tubes or waxed containers. Contact of this product with parts of trees, berries or vines other than mature brown bark can result in serious damage.

Mandatory Spray Drift Mitigation:

- When applying to crops via aerial application equipment, the spray boom must be mounted on the aircraft so as to minimize drift caused by wing tip or rotor blade vortices. The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
- When applying to crops via aerial application equipment, applicators must use ½ swath displacement upwind at the downwind edge of the field.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.
- For aerial applications, **DO NOT** release spray at a height greater than 10 feet above the crop canopy, unless a greater application height is required for pilot safety.
- For ground applications and aerial applications, select nozzle and pressure that deliver medium to coarse spray droplets as indicated in nozzle manufacturer's catalogues and in accordance with ASABE Standard 572.1.
- Spray at the appropriate boom height based on nozzle selection and nozzle spacing, but **DO NOT** exceed a boom height of 24 inches above target pest or crop canopy. Set boom to lowest effective height over the target pest or crop canopy based on equipment manufacturer's directions. Automated boom height controllers are advised with large booms to better maintain optimum nozzle to canopy height. Excessive boom height will increase the potential for spray drift.
- For non-crop vegetation management ground applications, apply with the nozzle height no more than 4 feet above the ground or target vegetation, unless necessitated by the application equipment. Examples would include roadside, railroad, utility rights of way, forestry and other industrial vegetation management applications where safety or natural barriers obstruct application.

Advisory Spray Drift Language

POLLINATOR ADVISORY: This product contains an herbicide. Follow all label directions and precautions to minimize potential off-target exposure in order to prevent effects to non-target plants adjacent to the treated site which may serve as habitat or forage for pollinators.

Spray Drift Management:

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

Importance of Droplet Size:

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. 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 sections of this label.

Techniques for 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** - Use the lower spray pressures specified for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.
- **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.

Controlling Droplet Size -Aircraft

- **Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.
- **Nozzle Type** - Solid stream nozzles (including disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.
- **Boom Length** - Longer booms increase drift potential. Therefore, a shorter boom length is advised.
- **Application Height** - Application more than 10ft. above the canopy increases the potential for spray drift.
- **Boom Height** - Setting the boom at the lowest referenced height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, the boom must remain level with the crop and have minimal bounce.

Drift Reduction Technology (DRT)

The EPA Drift Reduction Technology (DRT) Program was developed to encourage the manufacture, marketing, and use of spray technologies scientifically verified to significantly reduce pesticide drift. The use of DRTs will result in significantly less pesticide from spray applications drifting and being deposited in areas not targeted by those applications, compared to spray technologies that do not meet the minimum DRT standard. EPA-verified drift reduction technologies (DRTs) and their ratings will be added to the following webpage as they become available: <https://www.epa.gov/reducing-pesticide-drift/epa-verified-and-rated-drift-reduction-technologies>

- **Wind** - Drift potential increases at wind speeds of less than 3 mph (due to inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. **AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.**

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 hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.
- **Temperature Inversions** - Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Temperature inversions are characterized by increasing temperature 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.
- **Shielded Sprayers** - Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

PRODUCT INFORMATION

SURMISE® 5 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 Glufosinate resistant canola, corn, cotton and soybean, and in trees, vines and berries. **SURMISE® 5** may also be applied for potato vine desiccation. **SURMISE® 5** may also be applied as a broadcast burndown application before planting or prior to emergence of any variety of canola, corn, sweet corn*, cotton, olive, soybean or sugar beet.

*Not Registered for Use By California

SURMISE® 5 is only foliar-active with little or no activity in soil. Weeds that emerge after application will not be controlled. Apply **SURMISE® 5** to actively growing weeds as described in the **Weed Control 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® 5** 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 must be made between dawn and 2 hours before sunset to avoid the possibility of reduced lambsquarters palmer amaranth and velvetleaf control.
- Consult your local Cooperative Extension Service or Albaugh LLC Representative for guidelines on the optimum application timing for **SURMISE® 5** 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 including drought, cool temperatures or extended periods of cloudiness.
- Warm temperatures, high humidity and bright sunlight improve the performance of **SURMISE® 5**.
- **SURMISE® 5** is a foliar-active material with little or no soil-residual activity.
- 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® 5** 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, Sweet Corn, Cotton, Rice, Soybean and Sugar Beet	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® 5** applications to potatoes.

WEED RESISTANCE MANAGEMENT

GLUFOSINATE	GROUP	10	HERBICIDE
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For resistance management, **SURMISE® 5** is a Group 10 herbicide (glutamine synthetase inhibitor). Any weed population may contain or develop plants naturally resistant to **SURMISE® 5** and other Group 10 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance management strategies must be followed.

Contact your local sales representative, crop advisor or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of action for each target weed.

Fields must be scouted prior to application to identify the weed species present and their growth to determine if the intended application will be effective. Fields must be scouted after application to verify that the treatment was effective.

Suspected herbicide-resistant weeds may be identified by these indicators:

- Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
- A spreading patch of non-controlled plants of a particular weed species; and
- Surviving plants mixed with controlled individuals of the same species.

Report any incidence of non-performance of this product against a particular weed species to your Albaugh LLC representative or call 1-800-247-8013 or at www.albaughLLC.com. If resistance is suspected, treat weed escapes with an herbicide having a different mode of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production.

To delay herbicide resistance, take one or more of the following steps:

- **Start with clean fields.** Plant into weed-free fields and keep fields as weed free as possible. Effective tillage or the use of a burndown herbicide program can control emerged weeds prior to planting.
- **Scout fields.** Scout before and after herbicide application to monitor weed populations for early signs of resistance development.
- **Diversified approach.** To the extent possible, use a diversified approach towards weed management. Whenever possible, incorporate multiple weed-control practices including mechanical cultivation, biological management practices, and crop rotation.
- **Rotate crops.** Fields with difficult to control weeds must be rotated to crops that allow the use of herbicides with alternative modes of action or different management practices.
- **Control weed escapes.** To the extent possible, **DO NOT** allow weed escapes to produce seeds, roots or tubers. Manage weeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- **Clean equipment.** Prevent field-to-field and within-field movement of weed seed or vegetative propagules. Thoroughly clean plant residues from equipment before leaving fields.
- **Manage borders.** Prevent an influx of weeds into the field by managing borders.
- **Know your weeds, know your fields.** Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program must consider all of the weeds present.
- **Rotate mechanisms of action.** Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action. Use a broad-spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. **DO NOT** use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds. If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.
- **Apply herbicide correctly.** Apply this herbicide at the correct timing and rate to control the most difficult weed in the field.

Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes. For more information on Weed Resistance Management, visit the Herbicide Resistance Action Committee (HRAC) on the web at <http://www.hracglobal.com>.

WEED CONTROL FOR ROW CROPS

Rates in ounces of formulated product per acre for the control of weeds as shown in the weed control tables. In weed populations with mixed species, apply at a rate needed for the species targeting less than three inch weeds.

Broadleaf Weeds Controlled (including Glyphosate-, Triazine-, PPO-, ALS-, HPPD-, and Auxin-Resistant Biotypes)			
Common Name	Scientific Name	11 fl oz/A (0.40 lbs ai/A)	14.5 - 21.5 fl oz/A (0.52 – 0.77 lbs ai/A)
		C = Control NA = Not Advised S = Suppression	C = Control NA = Not Advised S = Suppression
Amaranth, Palmer	<i>Amaranthus palmeri</i>	NA	C
Anoda, spurred	<i>Anoda cristata</i>	C	C
Beggarweed, Florida	<i>Desmodium tortuosum</i>	C	C
Black medic	<i>Medicago lupulina</i> L.	C	C
Blueweed, Texas	<i>Helianthus ciliaris</i> DC.	C	C
Buckwheat, wild	<i>Polygonum convolvulus</i>	C	C
Buffalobur	<i>Solanum cornutum</i>	C	C
Burcucumber	<i>Sicyos angulatus</i>	C	C
Canola, volunteer ¹	<i>Brassica</i> spp.	C ¹	C ¹
Catchweed bedstraw (cleavers)	<i>Galium aparine</i> L.	C	C
Carpetweed	<i>Mollugo verticillata</i>	C	C
Chickweed, common	<i>Stellaria media</i>	C	C
Cocklebur, common	<i>Xanthium strumarium</i>	C	C
Copperleaf, hophornbeam	<i>Acalypha ostryaefolia</i>	C	C
Cotton, volunteer ¹	<i>Gossypium</i> sp.	C ¹	C ¹
Croton, tropic	<i>Croton glandulosus</i>	C	C
Croton, woolly	<i>Croton capitatus</i>	C	C
Eclipta	<i>Eclipta alba</i>	C	C
Devil's claw	<i>Proboscidea Louisiana</i>	C	C
Fleabane, annual	<i>Erigeron annuus</i>	C	C
Galinsoga, hairy	<i>Galinsoga ciliate</i>	C	C
Galinsoga, small flower	<i>Galinsoga parviflora</i>	C	C
Groundcherry, cutleaf	<i>Physalis angulate</i>	C	C
Geranium, cutleaf	<i>Geranium dissectum</i> L.	C	C
Hempnettle	<i>Galeopsis</i> sp.	C	C
Horsenettle, Carolina ²	<i>Solanum carolinense</i>	C ²	C ²
Jimsonweed	<i>Datura stramonium</i>	C	C
Knotweed	<i>Polygonum spec.</i>	C	C
Ladysthumb	<i>Polygonum persicaria</i>	C	C
Kochia	<i>Kochia scoparia</i>	C	C

Broadleaf Weeds Controlled (cont.) (including Glyphosate-, Triazine-, PPO-, ALS-, HPPD-, and Auxin-Resistant Biotypes)			
Common Name	Scientific Name	11 fl oz/A (0.40 lbs ai/A)	14.5 - 21.5 fl oz/A (0.52 - 0.77 lbs ai/A)
		C = Control NA = Not Advised S = Suppression	C = Control NA = Not Advised S = Suppression
Lambsquarters, common	<i>Chenopodium album</i>	C	C
Mallow, common	<i>Malva spec.</i>	C	C
Mallow, Venice	<i>Hibiscus trionum</i>	C	C
Marestail ³	<i>Conyza Canadensis</i>	S	C
Marsh-elder, annual	<i>Iva annua</i>	C	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i> var. <i>intergriuscula</i>	C	C
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	C	C
Morningglory, pitted	<i>Ipomoea lacunose</i>	C	C
Morningglory, sharppod	<i>Ipomoea cordatotriloba</i>	C	C
Morningglory, smallflower	<i>Jacquemontia tamnifolia</i>	C	C
Morningglory, tall	<i>Ipomoea purpurea</i>	C	C
Mustard, wild	<i>Sinapis arvensis</i>	C	C
Nightshade, black	<i>Solanum nigrum</i>	C	C
Nightshade, eastern black	<i>Solanum ptycanthum</i>	C	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C	C
Pennycress	<i>Thlaspi arvense</i>	C	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	C
Pigweed, prostrate	<i>Amaranthus blitoides</i>	C	C
Pigweed, spiny	<i>Amaranthus spinosus</i>	C	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	C
Pigweed, tumble	<i>Amaranthus albus</i>	C	C
Puncturevine	<i>Tribulus terrestris</i>	C	C
Sunflower, common	<i>Helianthus annuus</i>	C	C
Sunflower, prairie	<i>Corythucha pura</i>	C	C
Sunflower, volunteer	<i>Girassol</i>	C	C
Thistle, Russian ²	<i>Salsola kali</i>	S ²	C ²
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	NA	C
Waterhemp, tall	<i>Amaranthus tuberculatos</i>	NA	C
Purslane, common	<i>Portulaca oleracea</i>	C	C
Pusley, Florida	<i>Richardia scabra</i>	S	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C	C
Ragweed, giant	<i>Ambrosia trifida</i>	C	C

Broadleaf Weeds Controlled (cont.) (including Glyphosate-, Triazine-, PPO-, ALS-, HPPD-, and Auxin-Resistant Biotypes)			
Common Name	Scientific Name	11 fl oz/A (0.40 lbs ai/A)	14.5 - 21.5 fl oz/A (0.52 - 0.77 lbs ai/A)
		C = Control NA = Not Advised S = Suppression	C = Control NA = Not Advised S = Suppression
Senna coffee	<i>Cassia occidentalis</i>	C	C
Sesbania, hemp	<i>Sesbania herbacea</i>	C	C
Shepherd's-Purse	<i>Capsella bursa-pastoris</i>	C	C
Sicklepod (java bean)	<i>Senna obtusifolia</i>	C	C
Sida, prickly	<i>Sida spinosa</i> L.	C	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C	C
Smell melon	<i>Cucumis melo</i> L. var. <i>Dudaim</i>	C	C
Sowthistle, annual	<i>Sonchus oleraceus</i> L.	C	C
Soybeans, volunteer ¹	<i>Glycine max</i>	C ¹	C ¹
Spurge, prostrate	<i>Euphorbia humifusa</i>	C	C
Spurge, spotted	<i>Euphorbia maculata</i> L.	C	C
Starbur, bristly	<i>Acanthospermum hispidum</i>	C	C

¹Volunteer Glufosinate resistant crops from the previous season will not be controlled.

²May require sequential applications for control.

³For optimum control apply **SURMISE® 5** on 6" marestail.

Grass Weeds Controlled (including Glyphosate-, Triazine-, PPO-, ALS-, HPPD-, and Auxin-Resistant Biotypes)			
Common Name	Scientific Name	11 fl oz/A (0.40 lbs ai/A)	14.5 - 21.5 fl oz/A (0.52 - 0.77 lbs ai/A)
		C = Control NA = Not Advised S = Suppression	C = Control NA = Not Advised S = Suppression
Barley, volunteer ³	<i>Hordeum vulgare</i>	C ₃	C ₃
Barnyardgrass	<i>Echinochloa spec.</i>	C	C
Bluegrass, annual	<i>Poa annua</i> L.	C	C
Corn, volunteer ⁱ	<i>Zea mays</i> L.	C ¹	C ¹
Crabgrass, large ⁱⁱ	<i>Digitaria sanguinalis</i>	C ²	C ²
Crabgrass, smooth ²	<i>Digitaria ischaemum</i>	C ²	C ²
Cupgrass, woolly	<i>Eriochloa villosa</i>	C	C
Foxtail, bristly	<i>Setaria verticillata</i>	C	C
Foxtail, giant	<i>Setaria faberi</i>	C	C
Foxtail, green	<i>Setaria viridis</i>	C	C
Foxtail, robust purple	<i>Setaria viridis</i>	C	C

(continued)

Grass Weeds Controlled (cont.) (including Glyphosate-, Triazine-, PPO-, ALS-, HPPD-, and Auxin-Resistant Biotypes)			
Common Name	Scientific Name	11 fl oz/A (0.40 lbs ai/A)	14.5 - 21.5 fl oz/A (0.52 - 0.77 lbs ai/A)
		C = Control NA = Not Advised S = Suppression	C = Control NA = Not Advised S = Suppression
Foxtail, yellow ²	<i>Pennisetum glaucum</i>	C ²	C ²
Goosegrass ³	<i>Eleusine indica</i>	C ³	C ³
Johnsongrass, seedling	<i>Sorghum halepense</i>	C	C
Junglerice	<i>Echinochloa colonum</i>	C	C
Millet, wild-proso	<i>Panicum miliaceum</i> L.	C	C
Millet, proso volunteer	<i>Milium vernale</i>	C	C
Oat, wild ²	<i>Avena fatua</i>	C	C
Panicum, fall	<i>Panicum dichotomiflorum</i>	C	C
Panicum, Texas	<i>Panicum texanum</i>	C	C
Rice, red	<i>Oryza sativa</i> L.	C	C
Rice, volunteer ¹	<i>Oryza sativa</i>	C ¹	C ¹
Sandbur, field ²	<i>Cenchrus pauciflorus</i>	S ²	C ²
Shattercane	<i>Sorghum vulgare</i> PERS.	C	C
Signalgrass, broadleaf	<i>Brachiaria platyphylla</i>	C	C
Sprangletop	<i>Leptochloa spec.</i>	C	C
Sorghum, volunteer	<i>Sorghum</i> sp.	C	C
Stinkgrass	<i>Eragrostis ciliaris</i>	C	C
Wheat, volunteer ²	<i>Triticum spec.</i>	C ²	C ²
Witchgrass	<i>Panicum virgatum</i> L.	C	C

¹Volunteer Glufosinate resistant crops from the previous season will not be controlled. A timely cultivation 7 to 10 days after an application and/or retreatment 1021 days after the first application is advised for controlling dense clumps of volunteer corn or volunteer rice.

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

³A sequential application may be necessary for control.

Biennial and Perennial Weeds Controlled (including Glyphosate-, Triazine-, PPO-, ALS-, HPPD-, and Auxin Resistant Biotypes)		
For control of the biennial and perennial weeds listed below, tank mix partners or sequential applications SURMISE® 5 are advised by crop (see crop sections)		
Common Name	Scientific Name	14.5 - 21.5 fl oz/A (0.52 – 0.77 lbs ai/A)
		C = Control NA = Not Advised S = Suppression
Alfalfa	<i>Medicago sativa</i> L.	C
Bermudagrass	<i>Cynodon dactylon</i>	C
Bindweed, field	<i>Convolvulus arvensis</i> L.	C
Bindweed, hedge	<i>Calystegia sepium</i>	C
Bluegrass, Kentucky	<i>Poa pratensis</i> L.	C
Blueweed, Texas	<i>Helianthus ciliaris</i> DC.	C
Bromegrass, smooth	<i>Bromus inermis</i>	C
Burdock	<i>Arctium</i> sp.	C
Bursage, woolyleaf	<i>Ambrosia grayi</i>	C
Chickweed, Mouse-ear	<i>Cerastium vulgatum</i> L.	C
Clover, red	<i>Trifolium pretense</i> L.	C
Dandelion	<i>Taraxacum officinale</i>	S
Dock, smooth	<i>Rumex spec.</i>	S
Dogbane, hemp	<i>Apocynum cannabinum</i>	C
Goldenrod, gray	<i>Solidago nemoralis</i>	S
Johnsongrass, rhizome	<i>Sorghum halepense</i>	S
Milkweed, common	<i>Asclepias syriaca</i>	S
Milkweed, honeyvine	<i>Ampelamus albidus</i>	C
Muhly, wirestem	<i>Muhlenbergia frondosa</i>	S
Nightshade, sliverleaf	<i>Solanum elaeagnifolium</i>	S
Nutsedge, purple	<i>Cyperus rotundus</i>	C
Nutsedge, yellow	<i>Cyperus ferax</i>	C
Orchardgrass	<i>Dactylis glomerata</i> L.	C
Poinsettia, wild	<i>Euphorbia heterophylla</i> L.	S
Pokeweed	<i>Phytolaccaceae</i>	C
Quackgrass	<i>Agropyron repens</i>	C
Sowthistle, perennial	<i>Sonchus arvensis</i> L.	C
Thistle, bull	<i>Cirsium vulgare</i>	S
Thistle, Canada	<i>Cirsium arvense</i>	C
Timothy	<i>Phleum pretense</i> L.	S
Wormwood, biennial	<i>Artemisia biennis</i>	C

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.

Aerial Application: Poor coverage will result in reduced weed control. See the Spray Drift Management section of this label for additional information on proper application of **SURMISE® 5**.

COMPATIBILITY TESTING

If **SURMISE® 5** 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 8 fl oz of a liquid tank mix partner to be applied per acre, add 0.5 teaspoon to the jar.
4. For each 8 fl oz (0.29 lb ai) of **SURMISE® 5** 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: **SURMISE® 5** 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. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. **SURMISE® 5** cannot be mixed with any product containing a label prohibition against such mixing. Refer to the specific crop section for rate directions and other restrictions.

SURMISE® 5 must be applied with properly calibrated and clean equipment. **SURMISE® 5** is formulated to mix readily in water. Prior to adding **SURMISE® 5** to the spray tank, ensure that the spray tank is thoroughly clean, particularly if a herbicide with the potential to injure crops was previously used (see Cleaning Instructions).

Mix **SURMISE® 5** 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® 5** 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 specified 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 resuspend 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® 5**, thoroughly clean bulk storage tank, refillable tank, nurse tanks, spray tank, lines, and filter, particularly if a herbicide with the potential to injure crops was previously used. Equipment must be thoroughly rinsed using a commercial tank cleaner.

After using **SURMISE® 5**, triple rinse the spray equipment and clean with a commercial tank cleaner before using for crops not designated as Glufosinate resistant. 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.

APPLICATION DIRECTIONS FOR BURNDOWN USE

SURMISE® 5 may be applied as a **burndown treatment prior to planting or prior to emergence** of any variety of canola, corn, sweet corn^{***}, cotton, soybean, or sugar beet.

APPLICATION TIMING

Apply to small and actively growing weeds, targeting weeds less than 3 inches in height. For additional information on weed heights refer to the **WEED CONTROL FOR ROW CROPS** section.

Warm temperatures, high humidity, and bright sunlight improve the performance of **SURMISE® 5**. Weed control may be reduced when applications are 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® 5** is a foliar-active material with little or no soil-residual activity. **SURMISE® 5** is rainfast 4 hours after application, therefore, rainfall within 4 hours may necessitate retreatment. For best results on lambsquarters, Palmer amaranth and velvetleaf control, make applications of Glufosinate between dawn and 2 hours before sunset.

APPLICATION RATES

Apply 14.5 to 21.5 fl oz/A (*0.52 to 0.77 lbs ai/A*) depending on crop, weed species and intention of post application use. Please see application charts below.

Use a minimum spray volume of 15 gallons per acre, unless there is a difficult to control situation (including dense canopy, large weeds or unfavorable growing conditions are present). In difficult to control situations use a minimum spray volume of 20 gallons per acre.

RESTRICTIONS (see crop-specific use restrictions)

- **Cotton**, if environmental conditions prevent timely applications, a single application may be made of up to 21.5 fluid ounces per acre (*0.77 lb ai/A*) of **SURMISE® 5**. **If more than 14.5 fluid ounces per acre (*0.52 lb ai/A*) are used in any single application, the annual total may not exceed 36 fluid ounces per acre (*1.29 lbs ai/A*), including all application timings.**
- In **canola, corn (sweet^{***} and field) and soybean**, if environmental conditions prevent timely applications, a single application may be made of up to 21.5 fluid ounces per acre (*0.77 lb ai/A*) of **SURMISE® 5**. The year total may not exceed 21.5 fluid ounces per acre (*0.77 lb ai/A*) including all application timings.
- In **sugar beets**, if environmental conditions prevent timely applications, a single application may be made of up to 18 fluid ounces per acre (*0.65 lb ai/A*) of **SURMISE® 5**. No additional applications of **SURMISE® 5** may be made post emergence to the crop during the year.

ADJUVANTS

Ammonium sulfate (AMS) can be used at 1.5 lb/A to 3 lb/A. Rates are dependent on tank mix partners, environmental conditions, temperatures and potential for leaf burn. AMS has shown to improve weed control of difficult-to-control weeds like velvetleaf and lambsquarters, under difficult environmental conditions (low relative humidity) or hard water. An anti-foam agent is advised.

SURFACTANTS/OILS

The use of surfactants may be included. Please refer to the surfactant label for more detailed information.

APPLICATION DIRECTIONS FOR NON-GLUFOSINATE RESISTANT CROPS

Crop	Burndown	In-Season Applications	Yearly Maximum
Canola, Soybean, Sweet Corn***, Field Corn	14.5 – 21.5* fl oz/A (0.52 – 0.77 lb ai/A)	None	21.5* fl oz/A (0.77 lb ai/A)
Sugar beets	14.5 - 18 fl oz/A (0.52 – 0.65 lb ai/A)	None	18 fl oz/A (0.65 lb ai/A)
Cotton Use Pattern 1	14.5 fl oz/A (0.52 lb ai/A)	2 applications at 14.5 fl oz/A** (0.52 lb ai/A) Make second application 10-14 days after the first application.	43.5 fl oz/A (1.56 lbs ai/A)
Cotton Use Pattern 2	16 - 21.5 fl oz/A (0.58 – 0.77 lb ai/A)	1 application at 14.5 fl oz/A** (0.52 lb ai/A)	36 fl oz/A (1.29 lbs ai/A)

*Maximum rate in California is 18 fl. oz/A (0.65 lbs ai/A)

**Cotton designated as Glufosinate resistant OR with hooded sprayer for all varieties (see COTTON use directions).

***Not Registered for Use By California

APPLICATION DIRECTIONS FOR GLUFOSINATE RESISTANT CROPS

Crop	Burndown	In-Season Applications (Glufosinate Resistant Varieties Only)	Yearly Maximum
Soybean, Field Corn	14.5 – 21.5* fl oz/A (0.52 – 0.77 lb ai/A)	1 to 2 applications at 14.5 – 21.5 fl oz/A (0.53 – 0.79 lb ai/A) For soybeans, make second application at least 5 days after the first application. For field corn, make second application at least 7 days after first application.	43.5 fl oz/A (1.56lbs ai/A)
Sweet Corn***	11 fl oz/A (0.40 lb ai/A)	1 to 2 applications at 11 fl oz/A (0.40 lb ai/A) Make second application at least 7 days after the first application.	22 fl oz/A (0.79 lb ai/A)
Canola	14.5 – 21.5* fl oz/A (0.52 – 0.77 lb ai/A)	1 to 2 applications at 14.5 fl oz/A (0.52 ai/A) Make second application at least 10 days after the first application	43.5** fl oz/A (1.56 lbs ai/A)
Cotton Use Pattern 1	14.5 fl oz/A (0.52 lb ai/A)	1 to 2 applications at 14.5 fl oz/A (0.52 lb ai/A) Make second application 10-14 days after the first application.	43.5** fl oz/A (1.56 lb ai/A)
Cotton Use Pattern 2	15 – 21.5* fl oz/A (0.54 – 0.77 lb ai/A)	1 application at 14.5 fl oz/A**** (0.52 lb ai/A)	36 fl oz/A (1.29 lbs ai/A)
Sugar Beets	14.5 - 18 fl oz/A (0.52 – 0.65 lb ai/A)	1 application at 14.5 fl oz/A (0.52 lb ai/A)	30 fl oz/A (1.08 lbs ai/A)

* Maximum rate in California is 18 fl oz/A (0.65 lbs ai/A) with annual maximum of 36 fl oz/A (1.29 lbs ai/A)

** Maximum rate in California is 11 fl oz/A (0.40 lbs ai/A) with annual maximum of 22 fl oz/A (0.79 lbs ai/A)

***Not Registered for Use By California

****Cotton designated as Glufosinate resistant OR with hooded sprayer for all varieties (see **COTTON** use directions).

APPLICATION DIRECTIONS FOR USE ON GLUFOSINATE RESISTANT SUGAR BEETS

Not Registered for Use By California

Apply **SURMISE® 5** only to sugar beets designated as Glufosinate resistant. **SURMISE® 5** is a contact herbicide and requires uniform, thorough spray coverage to achieve optimum weed control.

APPLICATION TIMING

Applications of **SURMISE® 5** on sugar beets designated as Glufosinate resistant may be made from the cotyledon stage up to the 10-leaf stage of the sugar beet.

Apply to small and actively growing weeds, targeting weeds less than 3 inches in height. For additional information on weed heights refer to the **WEED CONTROL FOR ROW CROPS** section.

Warm temperatures, high humidity, and bright sunlight improve the performance of **SURMISE® 5**. Weed control may be reduced when applications are 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® 5** is a foliar-active material with little or no soil-residual activity. **SURMISE® 5** is rainfast 4 hours after application, therefore, rainfall within 4 hours may necessitate retreatment. For best result, on lambsquarters, Palmer amaranth and velvetleaf control, make applications of Glufosinate between dawn and 2 hours before sunset.

APPLICATION RATES

Apply 14.5 - 18 fluid ounces per acre (0.52 – 0.65 lb ai/A) depending on weed species, size and density per weed chart. If a second application is needed, make the second application in a minimum of 10 days after the first application. The maximum annual rate of **SURMISE® 5** on sugar beets is 30 fl oz/A (1.08 lbs ai/A).

Use a minimum spray volume of 15 gallons per acre, unless there is a difficult to control situation (including dense canopy, large weeds or unfavorable growing conditions are present). In difficult to control situations use a minimum spray volume of 20 gallons per acre.

ADJUVANTS

Ammonium sulfate (AMS) may be used at 1.5 to 3.5 lb/A. Adjuvant rates are dependent on a variety of factors including tank mix partners, environmental conditions (including temperature) and potential for leaf burn. AMS has shown to improve weed control of difficult-to-control weeds like lambsquarters and velvetleaf under difficult environmental conditions (including low relative humidity) or hard water. The use of an anti-foam agent is advised.

SURFACTANTS/OILS

The use of additional surfactants or crop oils in tank mixes with **SURMISE® 5** may increase the risk of crop response. Please refer to the surfactant label for more detailed information.

See **SPRAY DRIFT MANAGEMENT** section for more detailed information.

RESTRICTIONS TO THE DIRECTIONS FOR USE ON GLUFOSINATE RESISTANT SUGAR BEETS

- **DO NOT** apply more than 30 fl oz/A (1.08 lbs ai/A) of **SURMISE® 5** per year.
- **DO NOT** apply **SURMISE® 5** within 60 days of harvesting sugar beets.
- If a second application is needed, make the second application a minimum of 10 days after the first application.
- **DO NOT** exceed the single application rate maximum of 18 fl oz/A (0.65 lb ai/A).
- **DO NOT** make more than 2 applications per year when applied at reduced rates.
- **DO NOT** plant rotation crops in a field treated with **SURMISE® 5** 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 containing a Glufosinate resistance trait may be planted at any time.
- **DO NOT** graze the treated crop or cut for hay.
- **DO NOT** apply **SURMISE® 5** if sugar beets show injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.).
- **DO NOT** apply this product through any type of irrigation system.

APPLICATION DIRECTIONS FOR USE ON GLUFOSINATE RESISTANT CANOLA

Apply **SURMISE® 5** only to canola designated as Glufosinate resistant. Uniform, thorough spray coverage is necessary to achieve consistent weed control.

APPLICATION TIMING

Applications of **SURMISE® 5** 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 to small and actively growing weeds, targeting weeds less than 3 inches in height. For additional information on weed heights refer to the **WEED CONTROL FOR ROW CROPS** section.

Warm temperatures, high humidity, and bright sunlight improve the performance of **SURMISE® 5**. Weed control may be reduced when applications are 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® 5** is a foliar-active material with little or no soil-residual activity. **SURMISE® 5** is rainfast 4 hours after application, therefore, rainfall within 4 hours may necessitate retreatment. For best result, on lambsquarters, Palmer amaranth and velvetleaf control, make applications of Glufosinate between dawn and 2 hours before sunset.

APPLICATION RATES

Apply **SURMISE® 5** at 11 to 14.5 fl oz/A (*0.40 – 0.52 lb ai/A*) per application. If a second application of **SURMISE® 5** is needed, make the second application in a minimum of 7 days after the first application. The maximum annual rate of **SURMISE® 5** on canola is 43.5 fl oz/A (*1.56 lbs ai/A*).

Use a minimum spray volume of 15 gallons per acre, unless there is a difficult to control situation (including dense canopy, large weeds or unfavorable growing conditions are present). In difficult to control situations, use a minimum spray volume of 20 gallons per acre.

APPLICATION RATES WITH TANK MIX PARTNERS

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Apply **SURMISE® 5** at 11 to 14.5 fl oz (*0.40 – 0.52 lb ai*) per acre per application, depending on weed species, size and density per weed chart.

Tank mix partners advised to enhance grass control, including products containing quizalofop p-ethyl, sethoxydim and clethodim.

If a second application is needed, make the second application in a minimum of 10 days after the first application.

Tank mixes may aid in the performance of **SURMISE® 5**. Please refer to weed chart tables for a listing of weed species controlled at this rate. No additional surfactant is needed with any tank mix partner. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. **DO NOT** mix **SURMISE® 5** mix with any product containing a label prohibition against such mixing.

ADJUVANTS

Ammonium sulfate (AMS) may be used at 1.5 to 3.0 pounds per acre. Adjuvant rates are dependent on a variety of factors including tank mix partners, environmental conditions (including temperature) and potential for leaf burn.

AMS has shown to improve weed control of difficult-to-control weeds like lambsquarters and velvetleaf under difficult environmental conditions (including low relative humidity) or hard water. The use of an anti-foam agent is advised.

SURFACTANTS/OILS

The use of additional surfactants or crop oils in tank mixes with **SURMISE® 5** may increase the risk of crop response. Please refer to the surfactant label for more detailed information.

See **SPRAY DRIFT MANAGEMENT** section for more detailed information.

RESTRICTIONS TO THE DIRECTIONS FOR USE ON GLUFOSINATE RESISTANT CANOLA

1. **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.
2. **DO NOT** apply more than two applications of **SURMISE® 5** per year. Sequential applications must be at least 10 days apart.
3. **DO NOT** apply **SURMISE® 5** within 65 days of harvesting canola.
4. **DO NOT** exceed the maximum single application rate of 21.5 fl oz/A (0.77 lb ai/A).
5. **DO NOT** apply more than 43.5 fl oz/A (1.56 lbs ai/A) of **SURMISE® 5** per year.
6. **DO NOT** graze the treated crop or cut for hay.
7. **DO NOT** apply **SURMISE® 5** if canola shows injury from prior herbicide applications or environmental stress (drought, excessive rainfall, etc.).
8. **DO NOT** apply this product through any type of irrigation system.
9. Refer to the “Rotational Crop Restrictions” section under the “Product Information” heading of this label for the appropriate rotational crop plant back intervals.

APPLICATION DIRECTIONS FOR GLUFOSINATE RESISTANT CANOLA FOR SEED PROPOGATION

Not Registered for Use By California

Up to three applications of **SURMISE® 5** at up to 14.5 fl oz/A (0.52 lb ai/A) per application may be made to Glufosinate resistant canola for 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 GLUFOSINATE RESISTANT CANOLA FOR SEED PROPAGATION

- **DO NOT** apply more than three applications of **SURMISE® 5** per acre per year.
- **DO NOT** apply more than 14.5 fl oz/A (0.52 lb ai/A) per application.
- **Application interval** = not less than 10 days.
- **DO NOT** apply more than 43.5 fl oz/A (1.56 lbs ai/A) of **SURMISE® 5** per year.
- **DO NOT** apply **SURMISE® 5** 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® 5** 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.

APPLICATION DIRECTIONS FOR USE ON GLUFOSINATE RESISTANT SWEET CORN

Not Registered for Use By California

Apply **SURMISE® 5** only to sweet corn designated as Glufosinate resistant. Uniform, thorough spray coverage is necessary to achieve consistent weed control.

APPLICATION TIMING

Applications of **SURMISE® 5** on Glufosinate resistant sweet corn may be made from emergence until the V-6 stage of growth; i.e., 6 developed collars, whichever comes first.

Apply to small and actively growing weeds, targeting weeds less than 3 inches in height. For additional information on weed heights refer to the **WEED CONTROL FOR ROW CROPS** section.

Warm temperatures, high humidity, and bright sunlight improve the performance of **SURMISE® 5**. Weed control may be reduced when applications are 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® 5** is a foliar-active material with little or no soil-residual activity. **SURMISE® 5** is rainfast 4 hours after application, therefore, rainfall within 4 hours may necessitate retreatment. For best results on lambsquarters, Palmer amaranth and velvetleaf, make applications of Glufosinate between dawn and 2 hours before sunset.

APPLICATION RATES

Apply at a rate of 11 fl oz/A (0.40 lb ai/A), depending on weed species, size and density per weed chart. If required, a second application of 11 fl oz/A (0.40 lb ai/A) can be applied. The second application must be made a minimum 7 days after the first application. The maximum annual rate of **SURMISE® 5** on sweet corn is 22 fl oz/A (0.79 lb ai/A).

Use a minimum spray volume of 15 gallons per acre, unless there is a difficult to control situation (including dense canopy, large weeds or unfavorable growing conditions are present). In difficult to control situations, use a minimum spray volume of 20 gallons per acre.

APPLICATION RATES WITH TANK MIX PARTNERS

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Apply **SURMISE® 5** at 11 fl oz/A (0.40 lb ai/A) per application, depending on weed species, size and density per weed chart. Advised tank mix partners, including products containing atrazine, tembotrione, thiencazuron-methyl, and dicamba DGA salt.

If a second application is needed, make the second application in a minimum of 7 days after the first application.

Tank mixes may aid in the performance of **SURMISE® 5**. Please refer to weed chart tables for a listing of weed species controlled at this rate.

No additional surfactant is needed with any tank mix partner. The tank mix partner must be used in accordance with the label limitations, restrictions and precautions.

DO NOT exceed any labeled dosage rates. **DO NOT** mix **SURMISE® 5** mix with any product containing a label prohibition against such mixing.

ADJUVANTS

Ammonium sulfate (AMS) may be used at 1.5 lb/A to 3.5 lb/A. Adjuvant rates are dependent on a variety of factors including tank mix partners, environmental conditions (including temperature) and potential for leaf burn. AMS has shown to improve weed control of difficult-to-control weeds like lambsquarters and velvetleaf under difficult environmental conditions (including low relative humidity) or hard water. The use of an anti-foam agent is advised.

SURFACTANTS/OILS

The use of additional surfactants or crop oils in tank mixes with **SURMISE® 5** may increase the risk of crop response. Please refer to the surfactant label for more detailed information.

See **SPRAY DRIFT MANAGEMENT** section for more detailed information.

RESTRICTIONS TO THE DIRECTIONS FOR USE ON GLUFOSINATE RESISTANT SWEET CORN

1. **DO NOT** apply **SURMISE® 5** within 50 days of harvesting sweet corn ears and within 55 days of harvesting stover.
2. **DO NOT** apply more than 22 fl oz/A (0.79 lb ai/A) of **SURMISE® 5** on sweet corn per year.
3. **DO NOT** apply more than two applications of **SURMISE® 5** to sweet corn per year. Sequential applications must be at least 7 days apart.
4. **DO NOT** exceed the maximum single application rate of 11 fl oz/A (0.40 lb ai/A).
5. If **SURMISE® 5** was used in a burndown application, no postemergence applications may be made to the crop.
6. **DO NOT** use nitrogen solutions as spray carriers. A silicone-based antifoam agent may be added if needed.
7. **DO NOT** apply **SURMISE® 5** if corn shows injury from prior herbicide applications or environmental stress (drought, excessive rainfall etc.).
8. **DO NOT** apply this product through any type of irrigation system.
9. Refer to the **Rotational Crop Restrictions** section under the **Product Information** heading of this label for the appropriate rotational crop plantback intervals.

See the **Application Methods for Broadcast Application, Mixing Instructions** and **Weed Control for Row Crops** tables on this label for further instruction.

APPLICATION DIRECTIONS FOR USE ON GLUFOSINATE RESISTANT FIELD AND SILAGE CORN

Apply **SURMISE® 5** only to corn designated as Glufosinate resistant. Uniform, thorough spray coverage is necessary to achieve consistent weed control.

APPLICATION TIMING

Applications of **SURMISE® 5** on Glufosinate resistant corn may be made from emergence until the V-6 stage of growth, i.e., 6 developed collars, whichever comes first.

Apply to small and actively growing weeds, targeting weeds less than 3 inches in height. For additional information on weed heights refer to the **WEED CONTROL FOR ROW CROPS** section.

Warm temperatures, high humidity, and bright sunlight improve the performance of **SURMISE® 5**. Weed control may be reduced when applications are 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® 5** is a foliar-active material with little or no soil-residual activity. **SURMISE® 5** is rainfast 4 hours after application, therefore, rainfall within 4 hours may necessitate retreatment. For best results on lambsquarters, Palmer amaranth and velvetleaf make applications of **SURMISE® 5** between dawn and 2 hours before sunset

APPLICATION RATES

Apply **SURMISE® 5** at 14.5 to 21.5* fl oz/A (0.52 – 0.77 lb ai/A) per application depending on weed species, size and density per weed chart.

*Maximum rate in California is 11 fl oz/A (0.40 lbs ai/A)

If a second application is needed, make the second application at up to 14.5 fl oz/A (0.52 lb ai/A) with a minimum of 7 days after the first application. The maximum rate of **SURMISE® 5** on Glufosinate resistant field and silage corn is 43.5** fl oz/A (1.56 lb ai/A).

**Maximum annual rate in California is 22 fl oz/A (0.79 lbs ai/A).

Use a minimum spray volume of 15 gallons per acre, unless there is a difficult to control situation (including dense canopy, large weeds or unfavorable growing conditions are present). In difficult to control situations use a minimum spray volume of 20 gallons per acre.

APPLICATION RATES WITH TANK MIX PARTNERS

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Apply **SURMISE® 5** at 14.5 to 21.5* fl oz/A (0.52 – 0.77 lb ai/A), depending on weed species, size and density per weed chart.

*Maximum rate in California is 11 fl oz/A (0.40 lbs ai/A).

Advised tank mix partners, including products containing atrazine, tembotrione, thienencarbazone-methyl and dicamba, DGA salt. If a second application is needed, make the second application in a minimum of 7 days after the first application. Tank mixes may aid in the performance of **SURMISE® 5**.

Please refer to weed chart tables for a listing of weed species controlled at this rate. No additional surfactant is needed with any tank mix partner. The tank mix partner must be used in accordance with the label limitations, restrictions and precautions.

DO NOT exceed any labeled dosage rates. **DO NOT** mix **SURMISE® 5** mix with any product containing a label prohibition against such mixing.

ADJUVANTS

Ammonium sulfate (AMS) may be used at 1.5 to 3.0 lb/A. Adjuvant rates are dependent on a variety of factors including tank mix partners, environmental conditions (including temperature) and potential for leaf burn. AMS has shown to improve weed control of difficult-to-control weeds, like lambsquarters and velvetleaf, under difficult environmental conditions (including low relative humidity) or hard water. The use of an anti-foam agent is advised.

SURFACTANTS / OILS:

The use of additional surfactants or crop oils in tank mixes with **SURMISE® 5** may increase the risk of crop response. Please refer to the surfactant label for more detailed information.

See **SPRAY DRIFT MANAGEMENT** section for more detailed information.

APPLICATION DROP NOZZLE EQUIPMENT

Applications of **SURMISE® 5** Field corn and Corn Silage may be made with drop nozzles from emergence until corn is 36 inches tall. Avoid spraying into the whorl or leaf axils of the corn stalks

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

- **DO NOT** apply **SURMISE® 5** 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 per year. Sequential applications must be at least 10 days apart.
- **DO NOT** apply more than 43.5** fl oz/A (1.56 lb ai/A) of **SURMISE® 5** on corn per year.

**Maximum annual rate in California is 22 fl oz/A (0.79 lbs ai/A).

- **DO NOT** exceed the maximum single application rate of 21.5* fl oz/A (0.77 lb ai/A). *Maximum rate in California is 11 fl oz/A (0.40 lbs ai/A).
- **DO NOT** use nitrogen solutions as spray carriers. A silicone-based antifoam agent may be added if needed.
- **DO NOT** apply **SURMISE® 5** 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.
- Refer to the **“Rotational Crop Restrictions”** section under the **“Information”** heading of this label for the appropriate rotational crop plant back intervals.

APPLICATION DIRECTIONS FOR USE ON GLUFOSINATE RESISTANT COTTON

Uniform, thorough spray coverage is necessary to achieve consistent weed control. **SURMISE® 5** may be applied as a broadcast, over-the-top, post-emergence spray or as a directed spray only to Glufosinate resistant cotton. This product may be applied post-emergence to non-Glufosinate resistant cotton varieties or cultivars by using equipment designed to minimize contact of the spray with the cotton foliage. See the Application Methods on the non-Glufosinate resistant cotton section for selection of shielding equipment. Severe injury and damage may result if the **SURMISE® 5** contacts the foliage or stems of cotton **NOT** designated as Glufosinate resistant.

APPLICATION TIMING

Apply to small actively growing weeds, targeting weeds less than 3 inches in height. For additional information on weed heights, refer to the **WEED CONTROL FOR ROW CROPS** section.

Warm temperatures, high humidity, and bright sunlight improve the performance of **SURMISE® 5**. Weed control may be reduced when applications are 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® 5** is a foliar-active material with little or no soil-residual activity. **SURMISE® 5** is rainfast 4 hours after application, therefore, rainfall within 4 hours may necessitate retreatment. For best result, on lambsquarters, Palmer amaranth and velvetleaf control, make applications of Glufosinate between dawn and 2 hours before sunset.

APPLICATION RATES

Apply **SURMISE® 5** to cotton from emergence up to the early bloom stage at 14.5 fl oz/A (0.52 lb ai/A). If environmental conditions prevent a timely herbicide application, a single application of up to 21.5 fl oz/A (0.77 lbs ai/A) of **SURMISE® 5** may be made to cotton.

If more than 14.5 fl oz/A (0.52 lb ai/A) are used in any single application, the yearly total may not exceed 36 fl oz/A (1.29 lb ai/A), including all application timings. See **Restrictions to the Directions for Use on Glufosinate resistant Cotton** below for additional information.

Option 1: 3 post applications

Apply 14.5 fl oz/A (0.52 lb ai/A) per application depending on weed species, size and density per weed chart. If required a second application of 14.5 fl oz/A (0.52 lb ai/A) may be made 10-14 days after the first application. If required, a third application of 14.5 fl oz/A (0.52 lb ai/A) may be made 10-14 days after the second application. The yearly maximum rate of **SURMISE® 5** on cotton is 43.5 fl oz/A (1.56 lb ai/A).

Use a minimum spray volume of 15 gallons per acre, unless there is a difficult to control situation (including dense canopy, large weeds or unfavorable growing conditions are present). In difficult to control situations use a minimum spray volume of 20 gallons per acre.

Option 2: 2 post applications

Apply 16 to 21.5 fl oz/A (0.58 -0.77 lb ai/A) per application depending on weed species, size and density per weed chart. If required a second application of 14.5 fl oz/A (0.52 lb ai/A) can be applied. The sequential applications must be made minimum 10 days and may be made 14 days after each other. The maximum annual rate of **SURMISE® 5** on cotton is 36 fl oz/A (1.29 lb ai/A) per acre.

Use a minimum spray volume of 15 gallons per acre, unless there is a difficult to control situation (including dense canopy, large weeds or unfavorable growing conditions are present). In difficult to control situations use a minimum spray volume of 20 gallons per acre.

Use Pattern	1st Application	2nd Application <i>Minimum 10 days up to 14 days after 1st application</i>	3rd Application <i>Minimum 10 days up to 14 days after 2nd application</i>	Yearly Maximum
Option 1	14.5 fl oz/A (0.52 lb ai/A)	14.5 fl oz/A (0.52 lb ai/A)	14.5 fl oz/A (0.52 lb ai/A)	43.5 fl oz/A (1.56 lbs ai/A)
Option 2	16 - 21.5 fl oz/ A (0.58-0.77 lb ai/A)	14.5 fl oz/A (0.52 lb ai/A)	None	36 fl oz/A (1.29 lbs ai/A)

TANK MIX ON GLUFOSINATE RESISTANT COTTON

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Certain herbicide tank mixes may aid in the performance of **SURMISE® 5**. **SURMISE® 5** 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® 5** cannot be mixed with any product containing a label prohibition against such mixing.

ADJUVANTS

Ammonium sulfate (AMS) may be used at 1.5 to 3.0 lb/A. Adjuvant rates are dependent on a variety of factors including tank mix partners, environmental conditions (including temperature) and potential for leaf burn. AMS has shown to improve weed control of difficult-to-control weeds like lambsquarters and velvetleaf under difficult environmental conditions (including low relative humidity) or hard water. The use of an anti-foam agent is advised.

SURFACTANTS / OILS

The use of additional surfactants or crop oils in tank mixes with **SURMISE® 5** may increase the risk of crop response. Please refer to the surfactant label for more detailed information.

See **SPRAY DRIFT MANAGEMENT** section for more detailed information.

RESTRICTIONS TO THE DIRECTIONS FOR USE ON GLUFOSINATE RESISTANT COTTON

- **DO NOT** apply **SURMISE® 5** to Glufosinate resistant cotton in Florida, South of Tampa (Florida Route 60), or in Hawaii, except for test plots or breeding nurseries.
- **DO NOT** apply **SURMISE® 5** within 70 days prior to cotton harvest.
- **DO NOT** make more than 3 applications of **SURMISE® 5** to cotton per acre per year.
- **DO NOT** apply more than 14.5 fl oz/A (0.52 lb ai/A) per application.
- **DO NOT** apply more than 43.5 fl oz (1.56 lb ai/A) (including all application timings) to cotton per year under this application scenario. Sequential applications must be at least 10 days apart.
- If environmental conditions prevent timely applications resulting in large weeds or heavy infestations, a single application of **SURMISE® 5** at up to 21.5 fl oz/A (0.77 lb ai/A) may be made to cotton.
- **DO NOT** apply more than 21.5 fl oz/A (0.77 lb ai/A) of **SURMISE® 5** in a single application under this use scenario. If a single application greater than 14.5 fl oz/A (0.52 lb ai) is made, a subsequent application not to exceed 14.5 fl oz/A (0.52 lb ai) may be made to cotton. The annual total use rate under this scenario may not exceed 36 fl oz/A (1.29 lb ai) of **SURMISE® 5**. Sequential applications must 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 “**Product Information**” heading of this label for the appropriate rotational crop plant back intervals.

APPLICATION METHODS FOR NON-GLUFOSINATE RESISTANT COTTON

Application of **SURMISE® 5** to cotton varieties not designated as Glufosinate resistant 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:

$$\begin{array}{lcl} \text{Band width in inches} & \times & \text{Broadcast RATE} \\ \text{Row width in inches} & & \text{per acre} \end{array} = \begin{array}{l} \text{Amount of banded product} \\ \text{needed per acre} \end{array}$$
$$\begin{array}{lcl} \text{Band width in inches} & \times & \text{Broadcast spray VOLUME} \\ \text{Row width in inches} & & \text{per acre} \end{array} = \begin{array}{l} \text{Banded Spray Volume} \\ \text{needed per acre} \end{array}$$

TANK MIX ON NON-GLUFOSINATE RESISTANT COTTON

Certain tank mixes may aid in the performance of **SURMISE® 5**. No additional surfactant is needed with any tank mix partner. **SURMISE® 5** 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® 5** cannot be mixed with any product containing a label prohibition against such mixing.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

POST-HARVEST / FALL BURNDOWN ON NON-GLUFOSINATE RESISTANT COTTON

SURMISE® 5 may be applied as a post-harvest burndown treatment to fields (after cotton harvest). Up to 21.5 fl oz/A (0.77 lb ai/A) of **SURMISE® 5** may be applied in a single application to control larger weeds growing in the crop at the time of harvest. If more than 14.5 fl oz/A (0.52 lb ai/A) is used in a single application, the yearly total may not exceed 36 fl oz/A (1.29 lb ai/A), including all application timings. Refer to the **Rotational Crop Restrictions** section of this label for appropriate rotational crop information.

TANK MIX ON NON-GLUFOSINATE RESISTANT COTTON

Certain tank mixes may aid in the performance of **SURMISE® 5**. No additional surfactant is needed with any tank mix partner. **SURMISE® 5** 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® 5** cannot be mixed with any product containing a label prohibition against such mixing.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

RESTRICTIONS TO THE DIRECTIONS FOR NON-GLUFOSINATE RESISTANT COTTON POSTHARVEST BURNDOWN USE

- **DO NOT** apply more than 21.5 fl oz/A (0.77 lb ai/A) of **SURMISE® 5** in a single application to control larger weeds growing in the crop at the time of harvest.
- If more than 14.5 fl oz/A (0.52 lb ai/A) is used in a single application: **DO NOT** apply more than 36 fl oz/A (1.29 lb ai/A) per year, including all application timings.
- **DO NOT** make more than two applications per year. **DO NOT** make second application within 10 days of first.

APPLICATION DIRECTIONS FOR USE ON GLUFOSINATE RESISTANT SOYBEANS

Apply **SURMISE® 5** only to soybeans designated as Glufosinate resistant. Uniform, thorough spray coverage is necessary to achieve consistent weed control.

APPLICATION TIMING

Applications of **SURMISE® 5** on soybeans may be made from emergence up to but not including the R1 bloom growth stage.

Apply to small actively growing weeds, targeting weeds less than 3 inches in height. For additional information on weed heights refer to the **WEED CONTROL FOR ROW CROPS** section.

Warm temperatures, high humidity, and bright sunlight improve the performance of **SURMISE® 5**. Weed control may be reduced when applications are 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® 5** is a foliar-active material with little or no soil-residual activity. **SURMISE® 5** is rainfast 4 hours after application, therefore, rainfall within 4 hours may necessitate retreatment. For best results on lambsquarters, Palmer amaranth and velvetleaf, make applications of Glufosinate between dawn and 2 hours before sunset.

APPLICATION RATES

Apply **SURMISE® 5** at 14.5 to 21.5 fl oz/A (0.52 – 0.77 lb ai/A) depending on weed species, size and density per weed chart.

If a second application is needed, make the second application of 14.5 to 21.5 fl oz/A (0.52 - 0.77 lb ai/A), can be applied up to a yearly maximum of 43.5 fl oz/A (1.56 lbs ai/A).

Use a minimum spray volume of 15 gallons per acre, unless there is a difficult to control situation (including dense canopy, large weeds or unfavorable growing conditions are present). In difficult to control situations use a minimum spray volume of 20 gallons per acre.

Use Pattern Rate Ranges

1 st Application	2 nd Application Minimum of 5 days after 1 st Application	Yearly Maximum
14.5 - 21.5* fl oz/A (0.53 – 0.79 lb ai/A)	14.5-21.5* fl oz/A (0.53 - 0.79 lb ai/A)	43.5* fl oz/A (1.59 lbs ai/A)

*Maximum single application rate in California is 18 fl oz/A (0.65 lbs ai/A) with total annual maximum application of 36 fl oz/A (1.29 lbs ai/A)

SOYBEAN TANK MIX INSTRUCTIONS

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Certain herbicide tank mixes may complement **SURMISE® 5**. No additional surfactant is needed with any tank mix partner. **SURMISE® 5** 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® 5** cannot be mixed with any product containing a label prohibition against such mixing.

ADJUVANTS

Ammonium sulfate (AMS) may be used at 1.5 to 3.0 lb/A. Adjuvant rates are dependent on a variety of factors including tank mix partners, environmental conditions (including temperature) and potential for leaf burn. AMS has shown to improve weed control of difficult-to-control weeds like lambsquarters and velvetleaf under difficult environmental conditions (including low relative humidity) or hard water. The use of an anti-foam agent is advised.

SURFACTANTS / OILS

The use of additional surfactants or crop oils in tank mixes with **SURMISE® 5** may increase the risk of crop response. Please refer to the surfactant label for more detailed information.

See **SPRAY DRIFT MANAGEMENT** section for more detailed information.

RESTRICTIONS TO THE DIRECTIONS FOR USE ON SOYBEANS

- **DO NOT** apply **SURMISE® 5** within 70 days of harvesting soybean seed.
- **DO NOT** apply more than 43.5 fl oz/A (1.56 lb ai/A) of **SURMISE® 5** on soybeans per growing year. The maximum annual application rate in California is 36 fl oz/A (1.29 lbs ai/A)
- **DO NOT** apply more than 21.5 fl oz/A (0.77 lb ai/A) of **SURMISE® 5** in a single application. Maximum single application rate in California is 18 fl oz/A (0.65 lbs ai/A).
- **DO NOT** make more than 3 applications per year, when applied at reduced rates.
- **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® 5** 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 **"Product Information"** heading of this label for the appropriate rotational crop plant back intervals.
- Sequential applications must be at least 5 days apart

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

SURMISE® 5 may be applied to select out susceptible "segregates," i.e., canola, corn, cotton, and soybean plants that are sensitive to glufosinate-ammonium (i.e. **DO NOT** contain a Glufosinate resistance trait) during seed propagation.

- **Canola (Glufosinate resistant):** **SURMISE® 5** may also be used in canola seed propagation as a foliar spray to selectively eliminate canola plants that do not carry a Glufosinate resistance trait and as such, can be applied to remove susceptible segregates during canola seed propagation. Breeding material not possessing a Glufosinate resistance trait will be severely injured or killed if treated with this herbicide.

See **Application Use Directions for Use on Glufosinate resistant Canola** for use rates, application timing and use restrictions.

- **Corn (Glufosinate resistant):** Inbred lines, plants not possessing a Glufosinate resistance trait, 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 non-sensitive corn "segregates", **SURMISE® 5** may be applied at 11 fl oz/A (0.40 lb ai/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 11 fl oz/A (0.40 lb ai/A) plus AMS at 3 lb/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 need to 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 lb/100 gallons) to reduce potential leaf burn.

See **Application Use Directions for Use on Glufosinate resistant Corn** for use rates, application timing and use restrictions.

- **Cotton (Glufosinate resistant):** **SURMISE® 5** may also be used in cotton seed propagation as a foliar spray to selectively eliminate cotton plants that do not carry a Glufosinate resistant trait and as such, can be applied to remove susceptible segregates during cotton seed propagation. Breeding material not possessing a Glufosinate resistance trait will be severely injured or killed if treated with this herbicide.

See **Application Use Directions for Use on Glufosinate resistant Cotton** for use rates, application timing and use restrictions.

- **Soybean (Glufosinate resistant):** For the selection of non-sensitive soybean “segregates”, **SURMISE® 5** may be applied at up to 11 - 18 fl oz/A (0.40 – 0.65 lb ai/A) when soybean is in the third trifoliate stage. A second treatment of 11 - 14.5 fl oz/A (0.40 - 0.52 lb ai/A) may be applied up to but not including the bloom growth stage of soybean. Sequential applications must be at least 5 days apart.

See **Application Use Directions for Use on Glufosinate resistant Soybeans** for use rates, application timing and use restrictions.

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

Apply **SURMISE® 5** to the tree, vine, and berry crops listed below. Uniform, thorough spray coverage is necessary to achieve consistent weed control.

REGISTERED CROPS

BERRIES:

Crop Subgroup 13-B: Bushberry subgroup

Blueberry, highbush; blueberry, lowbush; currant; elderberry; gooseberry; huckleberry; Juneberry; lingonberry; salal

CITRUS CROP GROUP 10-10:

Orange or tangerine/mandarin, Calamondin; citron, citrus hybrids; Mediterranean Mandarin; orange, sour; orange, sweet; satsuma darin; tachibana orange; tangerine (mandarin); tangelo; tangor, trifoliate orange; cultivars, varieties and/or hybrids of these

Lemon or lime – Australian desert lime; Australian finger lime; Australian round lime; brown river finger lime; kumquat; lemon; lime; mount white lime; New Guinea wild lime; Russel River lime; sweet lime; Tahiti lime; cultivars, varieties and/or hybrids of these

Grapefruit – Grapefruit; Japanese summer grapefruit; pummelo; tangelo; unqi fruit; cultivars, varieties and/or hybrids of these.

OLIVES: all olive varieties

POME FRUIT (CROP GROUP 11-10):

Crop Group 11. Pome Fruits Group

Apple; crabapple; loquat; mayhaw; pear; pear, oriental; quince; azarole; hook; medlar; quince, Chinese; quince, Japanese; tejocote; cultivars, varieties and/or hybrids of these

STONE FRUIT (CROP GROUP 12-12):

Crop Group 12. Stone Fruits Group

Apricot; cherry, sweet; cherry, tart; nectarine, peach; plum; plum, chicksaw; damson; plum, Japanese; plumcot; prune; capulin; jujube and sloe; cultivars, varieties and/or hybrids of these.

TREE NUTS (CROP GROUP 14-12):

Crop Group 14. Tree Nuts Group

Almond; beech nut; Brazil nut; butternut; cashew; chestnut; chinquapin; filbert (hazelnut), hickory nut, macadamia nut (bush nut), pecan, pistachios, and walnut, black and English

GRAPES: all grape varieties (table, wine, and raisins)

APPLICATION TIMING

For best results, apply to emerged, young, actively growing weeds. Warm temperatures, high humidity, and bright sunlight improve the performance of **SURMISE® 5**. 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® 5** until sufficient regrowth has occurred.

Apply **SURMISE® 5** 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® 5** may be necessary to control plants generating from underground parts or seed.

Avoid contact of **SURMISE® 5** solution, spray, drift or mist with green bark, stems, or foliage, as injury may occur to trees and vines. **Only trunks with callused, mature brown bark may be sprayed unless protected from spray contact by nonporous wraps, grow tubes or waxed containers. Contact of SURMISE® 5 with parts of trees or vines other than mature brown bark can result in serious damage.**

APPLICATION METHODS FOR BROADCAST APPLICATIONS

Apply **SURMISE® 5** at the rates listed below for broadcast applications based on weed size and stage of growth.

Weed Size and Stage	SURMISE® 5 Rate	
	fl oz/A	lb ai/A
Weeds < 3" in height	24 fl oz/A	0.86 lb ai/A
Weeds < 6" in height pre-tiller grasses	28 fl oz/A	1.01 lb ai/A
Weeds > 6" in height and/or grasses that have tillered	28 - 41 fl oz/A	1.01 – 1.47 lbs ai/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 application, mix **SURMISE® 5** at 0.82 fl oz (0.03 lb ai) 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	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	

Grass Weeds

Barnyardgrass	Crabgrass, smooth	Junglerice	Shattercane
Bluegrass, annual	Cupgrass, woolly	Oat, wild	Sprangletop
Brome, 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	Mullein, common	Rocket, yellow
Bindweed, field	Dandelion	Mustard, tansy	Rose, wild
Bindweed, hedge	Dock, curly	Nutsedge, purple	<i>Rubus</i> spp.
Bluegrass, Kentucky	Dogbank (hemp)	Nutsedge, yellow	Spurge, leafy
Bromegrass, smooth Bulrush**	Fescue	Onion, wild	Thistle, bull
Burdock	Goldenrod, gray	Orchardgrass	Thistle, musk
Canada thistle	Guineagrass	Paragrass	Torpedograss
Clover, Alsike	Horsetail	Plantain	Vaseygrass
Clover, red	Lovegrass	Poison ivy/oak	Woodsorrel
Clover, white	Mugwort	Quackgrass	Yarrow, common

* 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 82 fl oz of **SURMISE® 5** per acre (2.95 lbs ai/A) to berry bushes and stone fruit per year.
- **DO NOT** exceed the maximum single application rate of 41 fl oz/A (1.47 lb ai/A)
- **DO NOT** make more than 2 applications per year at a maximum rate of 41 fl oz/A (1.47 lb ai/A) per application to berry bushes and stone fruit.
- **DO NOT** apply more than 123 fl oz (4.42 lbs ai/A) of this product per acre to tree nuts, vines, pome fruits, citrus and olives in any calendar year.
- **DO NOT** make more than 3 applications at a maximum rate of 41 fl oz/A (1.47 lb ai/A) per application to tree nuts, vines, pome fruits, citrus and olives.
- **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.
- Applications to berry bushes must be a minimum of 14 days apart.
- **DO NOT** make spot spray applications to suckers, as tree injury may occur.

SUCKER CONTROL WITH SURMISE® 5 HERBICIDE

SURMISE® 5 will reduce or eliminate sucker growth when applied to suckers that are young, green and uncalled. For sucker control, apply a split application approximately 4 weeks apart at 28 fl oz/A (1.01 lb ai/A). Coverage of all sucker foliage is necessary for optimum control. Suckers must not exceed 12 inches in length.

TANK MIX PARTNER

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

SURMISE® 5 does not provide residual weed control or control of unexposed plant parts. Certain herbicide tank mixes may aid in the performance of **SURMISE® 5** or be added to provide residual herbicide activity. No additional surfactant is needed with any tank mix partner. **SURMISE® 5** 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® 5** cannot be mixed with any product containing a label prohibition against such mixing.

diuron	napropamide	oryzalin	terbacil
flumioxazin	norfluazon	simazine	

APPLICATION DIRECTIONS FOR POTATO VINE DESICCATION

APPLICATION RATES AND TIMING

Apply **SURMISE® 5** at the beginning of natural senescence of potato vines. Apply 10.4 fl oz/A (0.38 lb ai/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® 5** 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 10.4 fl oz/A (0.37 lb ai/A) to potato vines per year or per single application.
- **DO NOT** harvest potatoes until 9 days or more after application of **SURMISE® 5**.
- **DO NOT** apply to potatoes grown for seed.
- Potatoes, canola, corn, cotton, soybean, and sugar beets may be planted at any time after the application of **SURMISE® 5** 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® 5** 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® 5** as a potato vine desiccant.
- **DO NOT** split this application or apply more than one application per harvest.

FALLOW FIELDS OR POST HARVEST

SURMISE® 5 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® 5** at 11 or 14.5 fl oz/A (0.40 - 0.52 lb ai/A) to fallow fields to control specific weeds. **SURMISE® 5** must be applied with ammonium sulfate. Tank mixes with 2,4-D, glyphosate or atrazine are advised with **SURMISE® 5** to enhance total weed control. When using **SURMISE® 5** 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.

RESTRICTIONS TO THE DIRECTIONS FOR USE ON FALLOW FIELDS OR POST HARVEST

- **DO NOT** apply more than 14.5 fl oz/A (0.52 lbs ai/A) in a single application.
- **DO NOT** make more than 3 applications per year
- **DO NOT** make sequential applications sooner than 14 days apart.
- **DO NOT** apply more than 43.5 fl oz/A (1.56 lbs ai/A) per year.

NON-CROP USES

SURMISE® 5 controls annual and perennial weeds in non-crop areas defined below in the “Where to Apply Section”. 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® 5 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® 5 must be applied at the labeled rate in the **HOW TO APPLY** section. Repeat applications of **SURMISE® 5** or tank mixes of **SURMISE® 5** 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® 5 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.

HOW TO APPLY

Spot or Directed Applications

This product may be used as a spot or directed spray application using 0.20 to 0.40 fl oz/gal of water (*0.007 -0.014 lbs ai/gal of water*) 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.

When making spot treatments **DO NOT** exceed broadcast per acre use rates.

Broadcast or Boom Applications

Apply 6 - 19 fl oz/A (*0.22 – 0.68 lb ai/A*) 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® 5 is compatible in tank mixes with many other herbicides including non-selective herbicides including glyphosate.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Tank mix applications of **SURMISE® 5** plus the following herbicides are advised for broad-spectrum postemergence and preemergence weed control:

Isopropylamine salt of imazapyr	butroxydim	norflurazon
prodiamine	isoxaben	Diglycolamine salt of 3,6-dichloro-o-anisic Acid
oryzalin	pendimethalin	oxadiazon

A compatibility test must be conducted with any potential tank mix partner with **SURMISE® 5**, 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® 5**.

For the Following Weeds Controlled by SURMISE® 5 Apply:

Spot application:

Apply 0.37 fl oz/gal of water (*0.013 lb ai/gal of water*) when the weed height or diameter is less than 6 inches. Apply 0.62 fl oz/ gal of water (*0.022 lb ai/gal of water*) when the weed height or diameter is 6 inches or greater.

Broadcast application:

Apply 20 fl oz/A (*0.72 lb ai/A*) when the weed height or diameter is less than 6 inches.

Apply 28 fl oz/A (*1.01 lb ai/A*) when the weed height or diameter is 6 inches or greater.

Broadleaf Weeds

Chickweed
Clover
Common
Cocklebur
Filaree

Jimsonweed
Kochia
London rocket
Malva (little mallow)

Marestail
Purslane
Shepherdspurse
Smartweed

Grasses and Sedges

Barnyardgrass
Cupgrass
Fall Panicum
Giant Foxtail
Goosegrass

Green Foxtail
Johnsongrass (rhizome)
Lovegrass
Shattercane
Smallflower Alexandergrass
(Signalgrass)

Stinkgrass
Windgrass, yellow
Foxtail

For the Following Weeds Controlled by SURMISE® 5 Apply:**Spot application:**

Apply 0.62 fl oz/gal of water (*0.022 lb ai/gal of water*) when the weed height or diameter is less than 6 inches.

Apply 0.88 fl oz/gal of water (*0.032 lb ai/gal of water*) when the weed height or diameter is 6 inches or greater.

Broadcast application:

Apply 28 fl oz/A (*1.01 lbs ai/A*) when the weed height or diameter is less than inches tall. Apply 40 fl oz/A (*1.44 lbs ai/A*) when the weed height or diameter is 8 inches or greater.

Broadleaf weeds

Annual sowthistle
Bindweed
Buffalobur
Burdock
Canada thistle
Curly dock
Dandelion
Dogbane (hemp)
Field growwell
Fleabane
Goldenrod
Horsetail

Lambsquarter
Leafy spurge
Mugwort
Musk thistle
Nettle
Nightshade
Pennycress
Pigweed, redroot
Plantain
Prickly lettuce
Ragweed
Russian thistle

Tansy mustard
Velvetleaf
Vervain
Virginia copperleaf
White heath aster
Wild buckwheat
Wild mustard
Wild onion
Wild rose
Wild turnip
Wood sorrel
Yellow rocket

Grasses and Sedges

Annual bluegrass
Bahagrass
Barley
Bermudagrass
Carpetgrass
Crabgrass
Dallisgrass

Downy brome grass
Fescue
Guineagrass
Kentucky bluegrass
Nutsedge
Paragrass
Quackgrass

Ryegrass
Sandbur
Smooth brome grass
Torpedograss
Vaseygrass
Wheat
Wild oat

Additional 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 including 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*

When applied as labeled, **SURMISE® 5** will provide control, partial control, or suppression of certain perennial woody weed species. Apply 32.5 - 96 fl oz/A (1.17 - 3.45 lb ai/A). Use the higher specified rates per acre of this product when conditions are not optimum for spray penetration, including 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>

*Not Registered for Use By California

WHERE TO APPLY

Trimming and Edging

SURMISE® 5 may be used for trimming and edging landscape areas including: 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® 5** in a tank mix with preemergence herbicides is advised. 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.

Conservation Reserve Program (CRP)*: This product can be used to control undesirable vegetation when rotating out of CRP acres or to suppress competitive growth and seed production of undesirable vegetation in CRP acres. For selective applications with broadcast spray equipment, apply 24 to 27.3 fl. oz./A (0.86 to 0.98 lb. ai/A) of this product in early spring before desirable CRP grasses, including crested and tall wheatgrass, break dormancy and initiate green growth. Late fall applications can be made after desirable perennial grasses have reached dormancy. Some stunting of CRP perennial grasses will occur if applications are made when plants are not dormant.

*Not Registered for Use By California

Wildlife Food Plots*: This product may be used as a site preparation treatment prior to planting wildlife food plots. Any wildlife food species may be planted after applying this product, or native species may be allowed to repopulate the area. If tillage is needed to prepare a seedbed, wait 7 days after applying this product before tilling.

*Not Registered for Use By California

Farmsteads, 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 including: areas around farmstead building foundations, shelter belts, along fences, airports, commercial plants, storage and lumber yards, educational facilities, fence lines, ditch banks, dry ditches, roadsides, schools, parking lots, tank farms, pumping stations, and parks. Refer to the How to Apply section of this labeling for appropriate application rates to control specific weeds.

Dormant Bermudagrass (Not for use on Residential Turf/Turfgrass/Lawns)

SURMISE® 5 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® 5** at a rate of 20 – 40 fl oz/A (0.72 – 1.44 lb ai/A) after most weeds have germinated and are in an early growth stage. Refer to the Weeds Controlled by **SURMISE® 5** section of this label for selecting specified rates. Applications of **SURMISE® 5** may also be used to suppress or control undesirable biennial or perennial weeds. **DO NOT** apply more than 40 fl oz (1.44 lbs ai) of **SURMISE® 5** 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 greenup 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® 5** as an over-the-top broadcast spray in ornamentals and shade or Christmas trees.

Directed spray application:

SURMISE® 5 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® 5 may be used to control weeds in greenhouses and shade- houses. Air circulation fans must be turned off during application. Apply **SURMISE® 5** 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.

USE RESTRICTIONS FOR NON-CROP USE

- **DO NOT** apply this product through any type of irrigation system.
- **DO NOT** apply directly to or allow drift to contact desirable green tissue or green, thin, or uncalloused bark of desirable vegetation.
- **DO NOT** allow grazing of vegetation treated with this product.
- **DO NOT** apply more than 123 fl oz of this product per acre per year (4.42 lbs ai/A/year).
- **DO NOT** apply more than 41 fl oz of this product per acre per single application (1.47 lbs ai/A/application).
- **DO NOT** apply more than a total of 3 broadcast applications (excluding spot treatment) per year.
- **DO NOT** apply more than 2 applications per year on Dormant bermudagrass.
- Applications must be made at least 14 days apart in non-crop areas.

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 must not exceed 125° F. If storage temperature for bulk **SURMISE® 5** is below 32° F, the material must 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. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 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 or reconditioning; 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.

SEED DISPOSAL: To dispose of out-of-date or otherwise unmarketable seed from plants which have been treated with this product, 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.

ALMACENAMIENTO Y DESECHO

No contamine agua, comida, ni forrajes mediante el almacenamiento o desecho.

Almacenamiento de pesticidas: No utilice ni almacene cerca del calor o llamas abiertas. Mantener el recipiente bien cerrado y seco en un lugar fresco y bien ventilado. La temperatura de almacenamiento no debe exceder los 125 °F. Si la temperatura de almacenamiento de SURMISE® 5 a granel es inferior a 32 °F, el material no debe bombearse hasta que su temperatura supere los 32 °F. Proteger contra la luz solar directa.

DESECHO DE PESTICIDAS: Los desechos resultantes del uso de este producto deben descartarse en el sitio o a una facilidad aprobada de eliminación de desechos.

MANIPULACIÓN DE RECIPIENTES:

Envases rígidos, no recargables, lo suficientemente pequeños como para agitarlos (es decir, con capacidades iguales o inferiores a 5 galones)

Recipiente no rellenable. **NO** reutilice o rellene este recipiente. Ofrezca para el reciclaje si está disponible. Enjuague tres veces o enjuague a presión el recipiente (o equivalente) inmediatamente después de vaciarlo. Enjuague tres veces siguiendo estas indicaciones: vacíe los contenidos restantes en el equipo de aplicación o un tanque de mezclar, y drene por 10 segundos después de que el flujo empiece a gotear. Llene el recipiente ¼ lleno con agua y tape de nuevo. Agite por 10 segundos. Eche el enjuague en el equipo de aplicación o tanque de mezclar, o almacene el enjuague para uso más tarde o eliminación. Drene por 10 segundos después de que el flujo empiece a gotear. Repita este procedimiento dos veces más. Una vez limpio, ofrezca el envase para ser reciclado o reacondicionado, o perfore y deseche en un área adecuada para desechos sanitarios, o deseche utilizando otros métodos aprobados por las autoridades estatales y locales. No queme a menos que esté permitido por las ordenanzas estatales y locales. Si se quema, manténgase alejado del humo.

ELIMINACIÓN DE SEMILLAS: Para desechar semillas vencidas o no comercializables de plantas que han sido tratadas con este producto, al voleo e incorpore ligeramente las semillas en los suelos del campo usando un disco u otro implemento adecuado. Cualquier cultivo resultante puede destruirse por medios químicos o mecánicos. Alternativamente, las semillas pueden destruirse mediante entierro profundo, incineración o eliminación en vertederos.

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