

# Willowood SULFEN 4SC

SULFENTRAZONE

GROUP

14

HERBICIDE

## Agricultural Uses

Asparagus, Berries (Crop Group 13(07)), Brassica (Head & Stem), Brassica (Leafy Greens), Cabbage (Transplanted Only), Citrus (Crop Group 10), Corn (Field, Seed, Pop), Beans & Peas (Dry Shelled), Flax, Fruiting Vegetables (except cucurbits), Okra, Grapes, Horseradish, Lima Beans (succulent), Melons, Mint, Peanuts, Potatoes, Rhubarb, Soybean, Peas (Succulent), Sugarcane, Sunflower, Tobacco, Tomato, Tree Nuts, Turnips, Wheat (Spring), Vegetable Soybean (Edamame)

### ACTIVE INGREDIENT:

Sulfentrazone: N-{2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazole-1-yl]phenyl}

methanesulfonamide ..... 39.6%

**OTHER INGREDIENTS:** ..... 60.4%

**TOTAL:** ..... 100.0%

**Contains 4.0 lbs. active ingredient per gallon**

**KEEP OUT OF REACH OF CHILDREN  
CAUTION/PRECAUCION**

Si usted no entiende la etiqueta, busque a alguien  
para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

## FIRST AID

**IF SWALLOWED:** 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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency medical information concerning this product, call the poison control center at **1-800-222-1222**.

**See label booklet for complete Precautionary Statements, Directions For Use, and Storage and Disposal.**

**EPA Reg. No. 87290-59**

### Manufactured For:

Willowood, LLC

1887 Whitney Mesa Drive #9740

Henderson, NV 89014-2069

20210811

# PRECAUTIONARY STATEMENTS

## HAZARDS TO HUMANS AND DOMESTIC ANIMALS

### CAUTION/PRECAUTION

Harmful if swallowed. Harmful if absorbed through skin. 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)

#### Applicators, mixers, loaders and other pesticide handlers must wear:

- Chemical-resistant gloves

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:

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

### ENVIRONMENTAL HAZARDS

This product is toxic to marine/estuarine invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and run off may be hazardous to terrestrial and aquatic plants adjacent to treated areas. Do not apply when weather conditions favor drift from the area treated. Do not apply where runoff is likely to occur. Do not contaminate water when disposing of equipment washwaters. Apply this product only as specified on this label.

### GROUNDWATER ADVISORY

Sulfentrazone is known to leach through soil into groundwater when this product is used under certain conditions, especially when soils are permeable and the water table is shallow. Groundwater contamination may result under these conditions.

Do not use this product on coarse soils, such as sand, which has less than 1% organic matter.

### SURFACE WATER ADVISORY

Sulfentrazone contaminates surface water through spray drift. It may also runoff into surface water under some conditions (primarily via dissolution in runoff water), for several months post-application. These conditions include poorly draining or wet soils with readily visible slopes toward adjacent surface water, frequently flooded areas, areas overlying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlying tile drainage systems that drain to surface water.

### PHYSICAL/CHEMICAL HAZARDS

Do not use or store near heat or open flame.

## DIRECTIONS FOR USE

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

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

DO NOT exceed specified label rates listed in this label. Refer to the directions for use for maximum use rates for specific crops. Calculate the 12-month period for the purpose of maximum use rates from the time that this product is first applied.

**FOR ALL TANK MIXTURES:** It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

#### **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 interval. 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.

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

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves (Barrier laminate, Butyl rubber  $\geq$  14 mils, Nitrile rubber  $\geq$  14 mils, Neoprene rubber  $\geq$  14 mils, Polyvinyl chloride  $\geq$  14 mils or Viton  $\geq$  14 mils)
- Shoes plus socks

#### **NON-AGRICULTURAL USE REQUIREMENTS**

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

Keep children and pets off treated area until dry.

#### **WEED RESISTANCE MANAGEMENT**

Willowood Sulfen 4SC contains sulfentrazone and is classified as a Group 14 herbicide (triazolinone chemical family) that inhibits protoporphyrinogen oxidase (Protox, PPO).

Herbicide resistance is defined as the inherited ability of a plant to survive and reproduce following exposure to a dose of herbicide normally lethal to the wild type. In a plant, resistance may be naturally occurring or induced by such techniques as genetic engineering or selection of variants produced by tissue culture or mutagenesis. Any weed population may contain or develop plants that are naturally resistant to Willowood Sulfen 4SC and other Group 14 herbicides. Weed species with acquired resistance to Group 14 herbicides may eventually dominate the weed population if Group 14 herbicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by Willowood Sulfen 4SC or other Group 14 herbicides.

Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed. If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.

To delay herbicide resistance, consider:

- Avoiding the consecutive use of Willowood Sulfen 4SC or other target site of action Group 14 herbicides that have a similar target site of action, on the same weed species.
- Using tank mixtures or premixes with herbicides from different target site of action Groups as long as the involved products are all registered for the same use, have different sites of action, and are both effective at the tank mix or prepack rate on the weed(s) of concern.
- Basing herbicide use on a comprehensive Integrated Pest Management (IPM) program.
- Monitoring treated weed populations for loss of field efficacy.

Users should scout before and after application. Users should report lack of performance to registrant or their representative.

Contact your local sales representative, extension agent, or certified crop advisors 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.

#### **PRODUCT INFORMATION**

Willowood Sulfen 4SC is a soil-applied selective herbicide that controls specific grasses, sedges, and broadleaf weeds. Sulfentrazone, the active ingredient in this product, inhibits a plant enzyme that is required for producing chlorophyll. Disabling this enzyme causes the release of singlet oxygen (O) which disrupts cellular membranes, causing cell leakage and cell death, which ultimately results in weed death. This product may only be used to control the pests and sites listed on this label.

### PROPER HANDLING INSTRUCTIONS

Do not mix or load Willowood Sulfen 4SC within 50 feet of any well, including abandoned wells, drainage wells, sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged wells and does not apply to impervious pads or properly diked mixing/loading areas.

Operations that involve mixing, loading, rinsing, or washing to Willowood Sulfen 4SC into or from pesticide handling or application equipment or container within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse, or washwater and rainwater that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain a minimum of 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely excluded precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specific minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Do not apply this product through any type of irrigation system. Do not use flood irrigation to apply or incorporate this product.

Willowood Sulfen 4SC must be used in a manner which will prevent back siphoning in wells, spills, or improper disposal of excess pesticide, spray mixtures or rinsates.

### APPLICATION INSTRUCTIONS

**See the crop specific instructions below for additional use precautions/restrictions.**

Apply Willowood Sulfen 4SC as a surface application, pre-emergence treatment before crop/weed emergence, or incorporate Willowood Sulfen 4SC into the soil prior to planting. Willowood Sulfen 4SC can also be applied post-plant application, over-the-top, and layby.

#### **Incorporated Treatment Prior to Planting**

Willowood Sulfen 4SC must be incorporated using a uniform surface application to a maximum depth of 2". Reduced control will occur if incorporated to a depth greater than 2". Be careful to ensure that there is no overlap between treated areas due to soil movement, or crop injury may occur.

#### **Soil Applied/Post-Plant Treatments**

Willowood Sulfen 4SC must be activated by moisture if making soil/post-plant treatments. The amount of moisture required depends on the soil type, amount of organic matter present, tilth, and existing soil moisture.

0.5-1.0" of irrigation or rainfall is required 7-10 days post-application. If 0.5-1.0" of moisture is not obtained, incorporate in shallow soil to obtain adequate control of target species. Moisture activation can be delayed for 10-14 days depending on soil type, amount of organic matter present, tilth, and existing soil moisture. If moisture activation is delayed, control may be reduced.

Willowood Sulfen 4SC will control listed weed species when activated. The level of control depends on the size and type of weed species. Control of listed germinating weeds will be reduced when rain or irrigation follows a period of dry weather.

Apply Willowood Sulfen 4SC prior to the germination of crop seeds in order to avoid damage to emerging seedlings. Crop injury can occur if treatment is delayed, seeds are germinating, and are close to the soil surface.

#### **Surface Applications**

If activation has not been triggered by rainfall or irrigation within 10 days of treatment, make a shallow incorporated treatment (<2") in order to control germinating weed species. Soil incorporation will facilitate Willowood Sulfen 4SC activation with existing soil moisture.

If there are drought conditions or prolonged periods when rain/irrigation is not possible, do not use Willowood Sulfen 4SC, and consider another weed control method.

**Post-Plant Treatments** must be made precisely according to crop specific directions.

**Lay-by/Over-the-Top** applications control listed weed species through contact and residual control (depending on weed species). Surfactant use can improve weed control and/or increase the likelihood of crop injury.

Certain crops will respond differently to Willowood Sulfen 4SC applications depending on use rate, specific crop species sensitivity, and the composition of the soil.

Seedlings and germinating seeds absorb Willowood Sulfen 4SC from the soil solution. The amount of active ingredient present in the soil depends on the soil type, pH, and the amount of organic matter present.

Willowood Sulfen 4SC is absorbed by organic matter and clay parts of soils. This absorption reduces the amount of active ingredient available for weed uptake. Clay content in soil tends to increase as the soil gets finer. Crop use directions are indicated per soil types. Refer to the following chart to determine the category of a particular soil type.

<b>Coarse Soil</b>	Sand, loamy sand, sandy loam
<b>Medium Soil</b>	Sandy clay loam, sandy clay, loam, silt loam, silt
<b>Fine Soil</b>	Silty clay loam, Silty clay, clay loam, clay

The amount of organic matter in soils varies within soil classifications. A detailed soil analysis is required to make an accurate assessment of the amount of organic matter in the soil.

The amount of sulfentrazone available for weed uptake increases as the soil pH increases. Take soil samples to accurately determine soil pH. The use of alkaline water will increase the amount of available sulfentrazone for weed uptake. However, if irrigation water pH is >7.5, crop injury can occur. The likelihood of crop injury due to high soil pH decreases as the plant grows.

Use rates for Willowood Sulfen 4SC are determined by the timing of application, the amount of activating moisture (rainfall/irrigation), soil characteristics, and soil pH.

Crop specific use rates for each crop are based on soil type, amount of organic matter in soil, and soil/pH interaction.

#### **Aerial Application Instructions**

Apply Willowood Sulfen 4SC with appropriate nozzles that provide optimal coverage and minimize drift and keep fine droplets to a minimum. Apply Willowood Sulfen 4SC in a volume that is appropriate to provide sufficient coverage. Use a minimum spray volume of 5 gallons per acre. **Do not** apply Willowood Sulfen 4SC when wind speed is likely to cause the product to drift outside the target area.

#### **Aerial Application Restrictions**

- Aerial application is allowed only when environmental conditions prohibit ground application. Aerial application will be allowed when the field is too wet to safely apply pesticides using ground equipment.
- When this product is allowed to be applied by air, applicator must use a minimum finished spray volume of 5 gallons per acre.
- The maximum release height must be 10 feet from the top of the crop canopy, unless a greater application height is required for pilot safety.

#### **Ground Application Instructions**

Apply Willowood Sulfen 4SC with a boom and nozzle sprayer that contains the appropriate spray tips, screens, and nozzles. Calibrate application equipment for optimal coverage and spray distribution at the appropriate pressure. Use spray nozzles designed to minimize drift and keep fine spray droplets to a minimum. Apply Willowood Sulfen 4SC in a minimum spray volume of 10 gallons per acre. Overlapping treatment areas can injure crops. When starting, turning or stopping, slower ground speed of the application equipment can lead to crop injury. **Do not** apply Willowood Sulfen 4SC when wind speed is likely to cause the product to drift outside the target area.

#### **CALIFORNIA SPECIFIC RESTRICTIONS**

**Runoff Groundwater Protection Areas:** Do not apply Willowood Sulfen 4SC in areas defined by the California Department of Pesticide Regulation as being "runoff groundwater protection areas\*" unless one of the following management practices can be met:

- 1) **Soil disturbance:** The treated soil is distributed within 7 days of application using a disc, harrow, rotary tiller or other mechanical device. This subsection does not apply to the area to be treated that is immediately adjacent to the crop row and that does not exceed 33% of the distance between crop row or in citrus, to the band from the tree row to the dripline; or
- 2) **Pesticide incorporation:** The pesticide shall be incorporated on 90% of the area treated within 48 hours of application using disc, harrow, rotary tiller or other mechanical device, or by sprinkler/low-flow irrigation (including chemigation where allowed by the label), using ¼"-1" irrigation water as described in the application instructions, at application rates that do not cause surface water runoff from the treated property or to wells on the treated property; or
- 3) **Band treatment:** This product is applied as a band treatment immediately adjacent to the crop row so that no more than 33% of the distance between rows is treated, or, in citrus, not more than the area from the tree row to the dripline is treated; or
- 4) **Timing of application:** This product is applied between April 1<sup>st</sup> and July 31<sup>st</sup>; or
- 5) **Retention of runoff on field:** For 6 months post-application, the field shall be designed to retain all irrigation runoff, all precipitation on, and drainage through the field by berms, levees, or non-draining circulation systems. The retention area on the field shall not have a percolation rate of more than 0.2"/hour (5"/24 hours); or
- 6) **Retention of runoff in a holding area off the field:** For 6 months post-application, all runoff shall be channeled to a holding area off of the application site, under the control of the property owner, that is designed to retain all irrigation runoff and all precipitation on, and drainage through, the treated field and all other areas draining onto that holding area. The holding area shall not have a percolation rate of more than 0.2"/hour (5"/24 hours); or

- 7) **Runoff onto a fallow field:** For 6 months post-application, runoff shall be managed so that it runs off onto an adjacent unenclosed fallow field at least 300 feet long that is not irrigated for 6 months after application with the exception of the addition of adequate moisture that is required for herbicidal activation following application as described under **Application Instructions**, with full consideration of any plant back restrictions.

\*Consult with your County Agricultural Commissioner to determine whether the application will be within an area designated by the California Department of Pesticide Regulation as either a Runoff Ground Water Protection Area or a Leaching Ground Water Protection Area. Details regarding the locations of these areas are also available via the internet at [www.cdpr.ca.gov/docs/emon/grndwtr/gwp\\_regs.htm](http://www.cdpr.ca.gov/docs/emon/grndwtr/gwp_regs.htm)

### Leaching Ground Water Protection Areas

Do not use in areas designed by the California Department of Pesticide Regulation as leaching ground water protection areas\* unless either:

- 1) The user does not apply any irrigation water for 6 months following the application of this product; or
- 2) The user applies this product to the planting bed or the berm above the level of irrigation water in the furrow or basin and the water level shall remain at or below that level for 6 months following application of the pesticide with the exception of the addition of adequate moisture that is required for herbicidal activation following application as described under **Application instructions**; or
- 3) Irrigation is managed so that the ratio of the amount of irrigation water applied divided by the net irrigation requirement is 1.25 or less for 6 months following application of this product.

\*Consult with your County Agricultural Commissioner to determine whether the application will be within an area designated by the California Department of Pesticide Regulation as either a Runoff Ground Water Protection Area or a Leaching Ground Water Protection Area. Details regarding the locations of these areas are also available via the internet at [www.cdpr.ca.gov/docs/emon/grndwtr/gwp\\_regs.htm](http://www.cdpr.ca.gov/docs/emon/grndwtr/gwp_regs.htm)

### Application in Combination with Dry Fertilizers

Willowood Sulfen 4SC can be impregnated with and applied in conjunction with a dry bulk fertilizer. Apply Willowood Sulfen 4SC and dry bulk fertilizer with ground application equipment. Do not make aerial applications of Willowood Sulfen 4SC in combination with dry bulk fertilizer. Follow state regulations in the preparation of Willowood Sulfen 4SC/fertilizer combinations, including mixture preparation, storage, transportation, selling, and treatment.

### Directions for Dry Bulk Fertilizer Impregnation

Use the following method for impregnation:

1. Ensure that spray nozzles are calibrated and positioned for uniform Willowood Sulfen 4SC coverage of the dry fertilizer during the mixture process.
2. Make a slurry with Willowood Sulfen 4SC and water in a clean container.
3. Once made, add the Willowood Sulfen 4SC/water slurry to the impregnation spray tank.
4. Finish the solution by adding water as required.

Use a dry bulk fertilizer blender such as a closed rotary-drum mixer that is fitted with appropriate spray application equipment. See the **Cleaning Application Equipment** section below prior to cleaning equipment used for impregnation, transportation, loading, and application of the Willowood Sulfen 4SC/dry fertilizer combination. Do not attempt to impregnate coated ammonium nitrate or limestone with Willowood Sulfen 4SC, as neither can absorb the herbicide.

### Application Instructions for Willowood Sulfen 4SC Impregnated Dry Fertilizers

Dry fertilizer impregnated with Willowood Sulfen 4SC must be applied using a dry fertilizer spreader. The application equipment must be correctly calibrated for sufficient and uniform coverage of the soil surface. If treatment is not uniform, some areas may go untreated which may cause reduced control of target species. Avoid overlapping applications, which may cause labeled use rates to be exceeded, and may cause adverse crop response. Apply the dry fertilizer/Willowood Sulfen 4SC combination at a rate of 200 lbs. impregnated dry bulk fertilizer per acre in order to provide sufficient soil coverage. See the specific crop use instructions for the specified rate of Willowood Sulfen 4SC per acre. Use the following equation to calculate the amount of Willowood Sulfen 4SC that must be used to impregnate 2,000 lbs. (one ton) of dry bulk fertilizer:

Fl. Oz. of Willowood Sulfen 4SC to be Applied/ton of dry bulk fertilizer	=	Fl. Oz. of Willowood Sulfen 4SC per acre	X	2,000	÷	Lbs. dry bulk fertilizer applied/acre
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Example 1: If use rate of Willowood Sulfen 4SC is 8 fl. oz. per acre, and 200 lbs. fertilizer will be applied per acre:

(8) (2,000/200) = 80 fl. oz. of Willowood Sulfen 4SC per ton of dry bulk fertilizer.

Example 2: If use rate of Willowood Sulfen 4SC is 12 fl. oz. per acre and 400 lbs. fertilizer will be applied per acre:

(12) (2,000/400) = 60 fl. oz. Willowood Sulfen 4SC per ton of dry bulk fertilizer.

### Application in Combination with Liquid Fertilizers

When applied in combination with a liquid fertilizer, Willowood Sulfen 4SC will control listed weeds. Sufficient soil coverage is critical to control target weeds. Fertilizer solutions that are used as a carrier for Willowood Sulfen 4SC may be concentrated formulations as blended or diluted in water.

### Use Directions for Liquid Fertilizer Combination

- The selected spray system must have the spray capacity to allow uniform application of the treatment solution and must be capable of maintaining agitation in the spray tank throughout the mixture and application procedures.
- Some spray application systems might need separate pumps to apply the solution and maintain agitation at the same time.
- Prior to combining the liquid fertilizer and Willowood Sulfen 4SC in the application tank, carry out a glass jar (1 quart size), add all mix partners, in their relative proportions. Invert, shake, or mix the jar thoroughly. If mixture forms precipitates (flakes or sludge), gels, balls up or forms oily films or layers, this indicates incompatibility. Though signs of incompatibility will typically be seen within 5 minutes of mixing, mixture should be observed for approximately 30 minutes.
- Combine Willowood Sulfen 4SC and the carrier liquid fertilizer as follows:
  1. Fill a clean spray tank ½ full of fertilizer solution.
  2. Begin agitation of the fertilizer solution.
  3. Use a clean container to create a slurry of Willowood Sulfen 4SC and water (equal parts of both)\*.
  4. Add the slurry slowly to the spray tank, continuing agitation throughout.
  5. Rinse the slurry mix container and add rinsate solution to spray tank.
  6. Finish filling spray tank to required level.
  7. Maintain agitation throughout. The Willowood Sulfen 4SC/water slurry must be mixed thoroughly prior to application.

\*For best mixing of the Willowood Sulfen 4SC/water slurry, add the slurry using induction systems on the spray fill plumbing system.

Read and follow the label of each tank mix product used for precautionary statements, directions for use, rates, timings, and other restrictions.

### Application Instructions for Willowood Sulfen 4SC Mixed with Liquid Fertilizers

- The spray application solution must be applied immediately following preparation.
- Maintain agitation throughout mixture and application.
- Do not store spray solution in the spray tank for an extended period of time, or overnight.
- A combination of Willowood Sulfen 4SC and liquid fertilizer must not be premixed in nurse tanks.
- Applicators/sellers of liquid fertilizer must follow state regulations for liquid fertilizers, including those regarding preparation, blending, registration, transportation, selling, treatment, and storage.

### Band Treatment Applications

Willowood Sulfen 4SC can be applied as a banded treatment application. When calculating rates for band treatment, apply the equivalent volume per acre for broadcast treatment by using the following equation:

Band Rate or Volume	=	Broadcast Rate (fl. oz./acre) or Volume per Acre	X	Band Width (in inches)	÷	Row Width (in inches)
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### Mixing and Loading Instructions

- Willowood Sulfen 4SC may be applied on its own or in combination with other herbicides for a broader spectrum of weed control. Combinations with other products may not have been tested, therefore, carry out a compatibility test before mixing and applying (in a lidded glass jar (1 quart size), add all partners in their relative proportions. Invert, shake, or mix the jar thoroughly. If mixture forms precipitates (flakes or sludge), gels, balls up or forms oily films or layers, this indicates incompatibility. Though signs of incompatibility will typically be seen within 5 minutes of mixing, mixture should be observed for approximately 30 minutes).
- Read and follow the label of each tank mix product used for precautionary statements, directions for use, rates, timings, and other restrictions.
- Spray equipment must be clean and free of product residue prior to mixing an application solution of Willowood Sulfen 4SC. Refer to the cleaning directions below and to the cleaning directions of the product(s) previously applied.
- Mix Willowood Sulfen 4SC as follows:
  1. Fill a clean spray tank ½ full of water required for treatment.
  2. Begin agitation.
  3. Use a clean container to create a slurry of Willowood Sulfen 4SC and water\*.
  4. Add the slurry slowly to the spray tank, continuing agitation throughout.
  5. Rinse the slurry mix container and add rinsate solution to spray tank.
  6. Finish filling spray tank to required level.
  7. Maintain agitation throughout. The Willowood Sulfen 4SC/water slurry must be mixed thoroughly prior to application.

\*For best mixing of the Willowood Sulfen 4SC/water slurry, add the slurry using induction systems on the spray fill plumbing system.

- Apply the herbicide solution immediately following mixing.
- Maintain mixing throughout application.
- Do not store spray solution in the spray tank for an extended period of time or overnight.
- A tank mixture containing Willowood Sulfen 4SC must not be premixed in nurse tanks.

### **Cleaning Application Equipment**

Crop injury can occur if residues of Willowood Sulfen 4SC are left in the spray tank following application. Application equipment must be cleaned immediately after treatment with Willowood Sulfen 4SC, and before applications with other products. Use the following cleaning procedure:

1. Drain the spray application equipment, including tank, hoses, spray boom and nozzles.
  2. Clean inside the spray tank with a high-pressure detergent, removing residues and sediment.
  3. Thoroughly rinse the spray tank.
  4. Flush the spray system out using water, including hoses, spray boom, and spray nozzles.
  5. Combine 3 gallons of ammonia (with a minimum 3% active ingredient) in 100 gallons of water. Make sufficient cleaning solution to operate the spray application equipment for a minimum of 15 minutes so that the system is thoroughly flushed.
  6. Remove spray tips, and all screens and filters and clean separately using the ammonia solution.
  7. Leave the cleaning solution or water in the nozzles, spray booms, hoses and spray tank overnight (or during storage) to ensure thorough cleaning.
  8. Drain the system completely prior to re-use. Use clean water to rinse/flush nozzles, spray booms, hoses and the spray tank. Remove spray tips, and all screens and filters and clean separately using the ammonia solution.
  9. Dispose of rinsate and excess cleaning solution in compliance with Federal, State, and local regulations and guidelines.
- Do not apply rinsate and cleaning solution to sensitive crops.
  - Do not store spray equipment for any extended period of time with Willowood Sulfen 4SC solution remains in the spray lines, nozzles, strainers, or boom plumbing.
  - Flush the nozzles and spray boom with clean water prior to use when application equipment has been idle or sitting in storage.
  - If small amounts of Willowood Sulfen 4SC remain in the equipment after cleaning, Willowood Sulfen 4SC may be released during later applications, which may cause crop injury to certain crops and/or other vegetation. The applicator is solely responsible for any damage caused by equipment that is not properly cleaned.
  - Equipment must not be flushed or drained near desirable plants/trees.
  - Ensure that bodies of water are not contaminated with application solution, rinsate or cleaning solution, including water that may be used for other crops, i.e., irrigation water.

### **SPRAY DRIFT REDUCTION ADVISORY**

Avoid non-target spray drift of this product to prevent whitening of desirable plants. **Drift is influenced by many factors including wind speed, spray pressure, particle size, nozzle type, and boom height.**

- Do not apply this product when weather conditions favor drift and/or wind speeds exceed 10 mph.
- Do not exceed spray pressures of 40 psi unless specified by the manufacturer of drift reducing spray tips and nozzles.
- Select nozzles and application pressure that deliver medium to coarse or larger spray droplets as indicated in the nozzle manufacturer's recommendations and in accordance with ASABE Standard S-572.
- Select coarse to very coarse droplet size when sulfentrazone is used as a pre-emergent/pre-plant application.
- Select medium to very coarse droplet size when sulfentrazone is used postemergence with a contact burndown herbicide.
- Applicators may spray only when wind speed is between 3 and 10 mph.
- Do not apply as spray droplets smaller than medium to coarse (defined by the ASABE standard).
- Ground applicators must use a minimum finished spray volume of 10 gallons per acre.
- When sulfentrazone is tank mixed with a contact burndown herbicide, ground applicators must use a minimum spray volume of 15 gallons per acre.
- For boom spraying, the Maximum release height is 30 inches from the soil for ground applications.

### **Spray Drift Management**

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator and grower are responsible for considering all these factors when making application decisions. **AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.**

The following drift management requirements must be followed to avoid off-target movement from aerial applications. These requirements do not apply to forestry applications, public health uses, or to applications of dry materials.

- The distance of the outermost nozzles on the boom must not exceed 75% of the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.
- Observe the regulations of the State where applications are made.
- Applicators must observe and abide by the requirements of the **Aerial Drift Reduction Advisory**.

### **Importance of Droplet Size**

The most effective way to reduce drift potential is to apply large droplets (450 microns or larger). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS! See **Wind, Temperature and Humidity**, and **Temperature Inversions** sections of this label portion.

### **Controlling Droplet Size**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE. Do not exceed the nozzle manufacturer's specified pressures.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - For aerial application, the recommended practice is to orient nozzles so that the spray is released parallel to the airstream. This orientation usually produces larger droplets as compared to other nozzle orientations. Significant nozzle deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles for both ground and aerial applications. Solid stream nozzles oriented straight back usually produce the largest droplets and the lowest drift potential in aerial applications.

### **Boom Length**

For some aerial use patterns, reducing the effective boom length to less than 75% of the wingspan or rotor length may further reduce drift without reducing swath width.

### **Application Height**

To minimize spray drift, make applications <10 feet above the top of the target plant canopy, unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

### **Swath Adjustment**

When aerial applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the upwind and downwind edges of the field, the applicator must compensate for this displacement by the path of the aircraft upwind. Increase swath adjustment or offset distance when conditions favor increased drift potential (higher winds, smaller droplets, etc.).

### **Wind**

Drift potential is lowest between wind speeds of 3 - 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Do not make applications below 3 mph due to variable wind direction and high inversion potential.

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

### **Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce large droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

### **Temperature Inversions**

Applications must not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing 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.

### **Sensitive Areas**

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

### Drift to Non-Target Areas

If Willowood Sulfen 4SC solutions drift into non-target areas, contact with other plants/crops can cause injury. Initially, crop/plant injury may be localized, depending on plant sensitivity and spray solution droplet size. Lesions or spots caused by drift may or may not coalesce. The effects of drift will not normally cause long-term effects on plant growth, but may negatively impact the fruit value or foliage where value is impacted by appearance. Defoliation may occur in plants that are sensitive to Willowood Sulfen 4SC.

Avoid drift of this product/solution containing this product to non-target areas by taking adequate notice of the prevailing environmental conditions. Use appropriate and accurately calibrated application equipment and utilize treatment procedures that will minimize the risk of drift.

Misapplication of this product where label directions are not followed may result in drift. The applicator/user of this product is solely responsible for any misapplication of Willowood Sulfen 4SC.

### REPLANTING AND ROTATIONAL CROPS

When replanting, keep soil tillage to a minimum to preserve the herbicide barrier.

If planting of the crops listed does not produce a stand, only plant crops specified in this label or the tank mix partner may be planted. Where there is a tank mixture, the most restrictive label directions must be followed.

The planted area must not be retreated with Willowood Sulfen 4SC or any other product containing sulfentrazone. Do not plant crops in previously treated areas unless in full compliance with the Rotational Crop Restrictions below.

Refer to the table below for the minimum interval from the time Willowood Sulfen 4SC was last applied until treated areas can be replanted with listed crops.

Crop	Minimum Rotational Interval (Months)
Barley, Rye, Triticale, Wheat	4
Corn (Field), Rice, Sorghum*	10
Alfalfa, Cereal Grains (Buckwheat, Oats, Pearl Millet, Proso Millet, Teosinte, Wild Rice), Sweet Potatoes	12
Corn (Pop & Sweet), Cotton	18
Canola	24
Sugar Beets	36
Asparagus, Berries, Brassica (head & stem) (Broccoli & Cabbage), Brassica (leafy vegetables), Citrus, Cowpea (succulent – TN only), Dry Shell Peas and Beans, Flax, Fruiting Vegetables (except cucurbits), Okra, Grapes, Horseradish, Lima Beans (succulent – TN only), Melons, Mint, Peanuts, Potato, Rhubarb, Soybean, Strawberry, Succulent Peas, Sugarcane, Sunflower subgroup 20B, Tobacco, Tree nuts, Turf, Turnips, Wheat (spring-Pacific Northwest states ID, OR, WA only)	Anytime

\*18-month minimum rotation interval for sorghum where use rates are greater than 8 oz. of Willowood Sulfen 4SC per acre.

- Certain crops have a rotational interval of longer than 12 months due to sensitivity and risk of crop injury. Carry out a representative bioassay of the target area on the rotational crop in order to assess the crop's sensitivity to applications of Willowood Sulfen 4SC.
- For all crops not listed in the table above, there must be a minimum rotational interval of 12 months.
- When this product is tank mixed with another product(s), read and follow the directions for all tank mix partners. The most restrictive directions must apply, including directions for re-cropping.

When applied in accordance with label directions (alone or in tank mixture), Willowood Sulfen 4SC will control the following weed species (refer to crop specific directions for additional information):

SCIENTIFIC NAME	COMMON NAME
<i>Amaranthus lividus</i>	Amaranth, Livid
<i>Amaranthus palmeri</i>	Amaranth, Palmer
<i>Amaranthus Powellii</i>	Amaranth, Powell
<i>Amaranthus spinosus</i>	Amaranth, Spiny
<i>Amaranthus dubius</i>	Amaranth, Spleen
<i>Anoda cristata</i>	Anoda, Spurred

(continued)

SCIENTIFIC NAME	COMMON NAME
<i>Echinochloa crus-galli</i>	Barnyardgrass, Common
<i>Galium aparine</i>	Bedstraw, Catchweed
<i>Convolvulus arvensis</i>	Bindweed, Field
<i>Poa annua</i>	Bluegrass, Annual
<i>Bromus</i> spp.	Bromegrass species
<i>Medicago polymorpha</i>	Burclover, California
<i>Mollugo verticillata</i>	Carpetweed
<i>Bromus tectorum</i>	Cheatgrass
<i>Malva</i> spp.	Cheeseweed species
<i>Stellaria media</i>	Chickweed, Common
<i>Trifolium</i> spp.	Clover species
<i>Acalypha ostryifolia</i>	Copperleaf, Hophornbeam
<i>Acalypha virginica</i>	Copperleaf, Virginia
<i>Digitaria sanguinalis</i>	Crabgrass, Large
<i>Digitaria ischaemum</i>	Crabgrass, Smooth
<i>Digitaria ciliaris</i>	Crabgrass, Southern
<i>Croton glandulosus</i>	Croton, Tropic
<i>Verbesina encelioides</i>	Crownbeard, Golden
<i>Eriochloa villosa</i>	Cupgrass, Woolly
<i>Cyperus compressus</i>	Cyperus, Hedgehog
<i>Eclipta alba</i>	Daisy, American
<i>Proboscidea louisiana</i>	Devils Claw
<i>Rumex crispus</i>	Dock, Curly
<i>Eclipta prostrata</i>	Eclipta
<i>Oenothera laciniata</i>	Evening Primrose, Cutleaf
<i>Festuca rubra</i>	Fescue, Red
<i>Amsinckia</i> spp.	Fiddleneck species
<i>Erodium botrys</i>	Filaree, Broadleaf
<i>Erodium cicutarium</i>	Filaree, Redstem
<i>Erodium moschatum</i>	Filaree, Whitestem
<i>Conyza bonariensis</i>	Fleabane, Hairy
<i>Descurainia Sophia</i>	Flixweed
<i>Setaria verticillata</i>	Foxtail, Bristly
<i>Setaria faberi</i>	Foxtail, Giant
<i>Setaria viridis</i>	Foxtail, Green
<i>Setaria glauca</i>	Foxtail, Yellow
<i>Galinsoga ciliate</i>	Galinsoga, Hairy
<i>Eleusine indica</i>	Goosegrass
<i>Chenopodium murale</i>	Goosefoot, Nettleleaf
<i>Physalis heterophylla</i>	Groundcherry, Clammy (seedling)
<i>Physalis angulata</i>	Groundcherry, Cutleaf
<i>Senecio vulgaris</i>	Groundsel, Common
<i>Lamium amplexicaule</i>	Henbit

SCIENTIFIC NAME	COMMON NAME
<i>Conyza Canadensis</i>	Horseweed (Marestail)
<i>Datura stramonium</i>	Jimsonweed
<i>Sorghum halepense</i>	Johnsongrass
<i>Echinochloa colona</i>	Junglerice
<i>Polygonum arenastrum</i>	Knotweed, Common
<i>Kochia scoparia</i>	Kochia (ALS and Triazine Resistant)
<i>Kyllinga brevifolia</i>	Kyllinga, Green
<i>Kyllinga gracillima</i>	Kyllinga, False Green
<i>Polygonum persicaria</i>	Ladysthumb
<i>Chenopodium album</i>	Lambsquarters, Common
<i>Montia perfoliata</i>	Lettuce, Miners
<i>Eragrostis</i> spp.	Lovegrass species
<i>Malva neglecta</i> wall R.	Mallow, Common
<i>Malva parviflora</i>	Mallow, Little
<i>Anthemis cotula</i> L.	Mayweed, Chamomile
<i>Ampelamus albidus</i>	Milkweed, Honeyvine
<i>Ipomoea hederacea integriscula</i>	Morningglory, Entireleaf
<i>Ipomoea hederacea</i> var. <i>hederacea</i>	Morningglory, Ivyleaf
<i>Ipomoea wrightii</i>	Morningglory, Palmleaf
<i>Ipomoea turbinate</i>	Morningglory, Purple
<i>Ipomoea coccinea</i> L.	Morningglory, Red
<i>Ipomoea coccinea</i>	Morningglory, Scarlet
<i>Jacquemontia tamnifolia</i>	Morningglory, Smallflower
<i>Ipomoea purpurea</i>	Morningglory, Tall
<i>Eremocarpus setigerus</i>	Mullein, Turkey
<i>Brassica</i> spp.	Mustard species
<i>Sisymbrium altissimum</i>	Mustard, Tumble
<i>Urtica urens</i>	Nettle, Burning
<i>Solanum nigrum</i>	Nightshade, Black
<i>Solanum ptycanthum</i>	Nightshade, Eastern Black
<i>Cyperus rotundus</i>	Nutsedge, Purple
<i>Cyperus esculentus</i>	Nutsedge, Yellow
<i>Dactylis glomerata</i>	Orchardgrass
<i>Panicum dichotomiflorum</i>	Panicum, Fall
<i>Amaranthus blitoides</i>	Pigweed, Prostrate
<i>Amaranthus retroflexus</i>	Pigweed, Redroot
<i>Amaranthus hybridus</i>	Pigweed, Smooth
<i>Amaranthus albus</i>	Pigweed, Tumble
<i>Chamomilla suaveolens</i>	Pineapple Weed
<i>Plantago rugelii</i> Decne	Plantain, Blackseed
<i>Plantago lanceolata</i>	Plantain, Narrow-leaved
<i>Diodia teres</i>	Poorjoe
<i>Porophyllum ruderales</i>	Porophyllum

SCIENTIFIC NAME	COMMON NAME
<i>Euphorbia heterophylla</i>	Poinsettia, Wild
<i>Tribulus terrestris</i>	Puncturevine
<i>Portulaca oleracea</i>	Purslane, Common
<i>Richardia scabra</i>	Pusley, Florida
<i>Raphanus raphanistrum</i>	Radish, Wild
<i>Calandrinia ciliate</i>	Redmaids
<i>Melochia corchorifolia</i>	Redweed
<i>Sisymbrium irio</i>	Rocket, London
<i>Lolium multiflorum</i>	Ryegrass, Italian
<i>Cenchrus spinifex</i>	Sandbur
<i>Cyperus</i> spp.	Sedge, Annual
<i>Cyperus retrorsus</i>	Sedge, Cylindrical
<i>Cyperus globulosus</i>	Sedge, Globe
<i>Cyperus surinamensis</i>	Sedge, Surinam
<i>Cyperus polystachyos</i>	Sedge, Texas
<i>Cassia occidentalis</i>	Senna, Coffee
<i>Capsella bursa-pastoris</i>	Shepherd's Purse
<i>Sida spinosa</i>	Sida, Prickly
<i>Sida acuta</i>	Sida, Southern
<i>Brachiaria platyphylla</i>	Signalgrass, Broadleaf
<i>Polygonum pensylvanicum</i>	Smartweed, Pennsylvania
<i>Cucumis melo</i>	Smellmelon
<i>Sonchus</i> spp.	Sowthistle species
<i>Leptochloa filiformis</i>	Sprangletop, Red
<i>Chamaesyce maculate</i>	Spurge, Spotted
<i>Acanthospermum hispidum</i>	Starbur, Bristly
<i>Eragrostis cilianensis</i>	Stinkgrass
<i>Linaria vulgaris</i>	Toadflax, Yellow
<i>Emilio sonchifolia</i>	Tasselflower, Red
<i>Salsola kali</i>	Thistle, Russian
<i>Amaranthus rudis</i>	Waterhemp, Common
<i>Amaranthus tuberculatus</i>	Waterhemp, Tall
<i>Ludwigia decurrens</i>	Waterprimrose, Winged
<i>Epilobium brachycarpum</i>	Willowleaf, Panicle-leaf
<i>Panicum capillare</i>	Witchgrass

## CROP USE DIRECTIONS

### ASPARAGUS

<b>Application Timing</b> <ul style="list-style-type: none"> <li>• Apply in the spring before crop and weeds emerge.</li> <li>• Apply to crowns that have completed one full year growing season, and are healthy and vigorous.</li> </ul>	
<b>Application Rates</b> <b>Coarse Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 4.5 - 6.0 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 6.8 - 8.0 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 8.0 - 10.0 fl. oz./acre</li> </ul> <b>Medium Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 6.0 - 8.0 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 8.0 - 10.0 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 10.1 - 12.0 fl. oz./acre</li> </ul> <b>Fine Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 8.0 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 10.0 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 12.0 fl. oz./acre</li> </ul> <p>See Soil Categories chart for additional information.</p>	<b>Important</b> <ul style="list-style-type: none"> <li>• Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.</li> <li>• Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of asparagus.</li> </ul>
<b>Application Instructions</b> <ul style="list-style-type: none"> <li>• Apply Willowood Sulfen 4SC in 10 to 40 gallons of spray solution per acre.</li> <li>• Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (&lt;7.0) and lower rates within the specified rate range with higher soil pH (&gt;7.0).</li> </ul>	
<b>Application Restrictions</b> <ul style="list-style-type: none"> <li>• Do not apply more than 12 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>• Do not make more than one application in a 12-month period (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>• Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.</li> <li>• Pre-Harvest Interval (PHI): 14 Days</li> <li>• Do not use on soils classified as "sand" (with &lt;1% organic matter).</li> </ul>	
<b>Tank Mixes</b> Tank mix Willowood Sulfen 4SC with pesticides registered for use on asparagus. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).	

## BERRIES

### (Crop Group 13(07))

Pre-Harvest Interval (PHI): 3 days

Aronia berry, Bayberry, Bearberry, Bilberry, Blackberry (including Andean Blackberry, Arctic Blackberry, Bingleberry, Black Satin Berry, Boysenberry, Brombeere, California Blackberry, Chesterberry, Cherokee Blackberry, Cheyenne Blackberry, Common Blackberry, Coryberry, Darrowberry, Dewberry, Dirksen Thornless Berry, Evergreen Blackberry, Himalayaberry, Hullberry, Lavacaberry, Loganberry, Lowberry, Lucretiaberry, Mammoth Blackberry, Marionberry, Mora, Mures Deronce, Nectarberry, Northern dewberry, Olallieberry, Oregon Evergreen Berry, Phenomenal Berry, Range Berry, Ravenberry, Rosssberry, Shawnee Blackberry, Southern Dewberry, Tayberry, Youngberry, Zarzamora, and cultivars and hybrids of these), Blueberry (Highbush & Lowbush), Buffalo Currant, Buffaloberry, Che, Chilean, Guava, Chokecherry, Cloudberry, Cranberry, Cranberry (Highbush), Currant, Black Currant, Red, Elderberry, European Barberry, Gooseberry, Honeysuckle, edible Huckleberry, Jostaberry, Juneberry (Saskatoon berry), Kiwifruit, Funny Kiwifruit, Hardy, Lingonberry, Maypop, Mountain Pepper Berries, Mulberry, Muntries, Native Current, Partridgeberry, Phalsa, Pin Cherry, Raspberry, Black and Red Berry, Salal, Schisandra Berry, Sea Buckthorn, Serviceberry, Wild Raspberry, and Cultivars, varieties and/or hybrids of these

#### Application Timing

- Make a broadcast soil application when weeds are not present and/or a post-emergence herbicide has been tank mixed with Willowood Sulfen 4SC.
- Make applications to crops that have been established for one full growing season and are healthy and vigorous.
- Apply Willowood Sulfen 4SC when soil is moist and application will be followed by ½" rainfall or irrigation within two weeks after application.
- Time applications to take advantage of normal rainfall and cool temperatures, especially if using drip or micro sprinkler irrigation is used which may not provide uniform incorporation into the soil.

#### Application Instructions

- Apply with ground application equipment only.
- Make a uniform broadcast soil application to orchard and vineyard floors, to berry beds, and furrows.
- Apply in a minimum of 10 gallons of spray solution per acre. The spray solution pH should be 5.0-9.0; nozzles must meet manufacturer's spray volume and pressure specifications for pre-emergence and post-emergence herbicide applications.
- Wrap the trunks of green bark, young vines, and trees with a non-porous wrap, grow tubes, or wax containers to avoid Willowood Sulfen 4SC contact with green tissue.
- Apply as a uniform band application directed to the base of the tree trunk in trees and vines and to the base of the berry and beds in berries.
- **Broadcast Applications:** Make a single application of 4-12 fl. oz./acre (0.125-0.375 lb. AI/A).
- **Banded Applications:** Refer to the following chart for the appropriate rate and volume of Willowood Sulfen 4SC to be applied. Willowood Sulfen 4SC can be applied twice in one year. For band treatments, apply the broadcast rate and volume per acre. To determine these:

$$\text{Band Rate} = \frac{\text{Band Width (Fl.)}}{\text{Row Width Feet}} \times \text{Broadcast Rate/Acre}$$

$$\text{Band Volume} = \text{Band Width Feet} \times \text{Broadcast Volume/acre}$$

#### Application Restrictions

- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.
- Do not apply Willowood Sulfen 4SC to green tissue, crop foliage, or fruit.
- Do not make aerial applications.
- Do not apply after petal fall unless using a hooded or shielded sprayer to avoid contact with foliage and fruit.
- Do not apply when heavy crop trash is present (leaves/branches/weed residue). Clean the area to be treated prior to applying Willowood Sulfen 4SC.
- Do not apply to powdery soils or soils where windy conditions may displace soil unless soil can be irrigated immediately after treatment.
- Pre-Harvest Interval (PHI): 3 days
- If banded treatments are made, wait a minimum of 60 days between applications. Do not exceed the seasonal maximum use rate.

#### Tank Mixes

Willowood Sulfen 4SC can be tank mixed with other pre-emergence and post-emergence burndown herbicides labeled for use on listed crops. Refer to the tank mix partner label for the proper use directions and restrictions. Use the most restrictive label and precautions of the tank mix product(s). Do not tank mix sulfentrazone-containing products with flumioxazin.

#### Replanting in New or Established Orchards and Vineyards

Wait at least 30 days after applying Willowood Sulfen 4SC before replanting trees and vines in newly planted and established orchards and vineyards. Use untreated soil when replanting trees and vines.

## BERRIES (continued)

### Control/Suppression of Sedge/Nutsedge

- Make a post-emergence application of Willowood Sulfen 4SC at 12 fl. oz./acre (0.375 lb. AI/A).
- Use a 25% v/v non-ionic surfactant (NIS).
- Post-emergence applications may be most effective since Willowood Sulfen 4SC is absorbed into the plant through the foliage and roots.
- Pre-emergence applications of Willowood Sulfen 4SC will suppress sedges, but will not provide complete control.
- For optimal control of purple nutsedge, make split applications of Willowood Sulfen 4SC. Make an initial application of 4-6 fl. oz./acre followed by a 2<sup>nd</sup> application to actively growing purple nutsedge. DO NOT exceed the maximum application rate of 12 fl. oz./acre (0.375 lb. AI/A). Optimal control may not occur until the 2<sup>nd</sup> year after the initial application of Willowood Sulfen 4SC.

## BRASSICA (HEAD AND STEM)

(Broccoli, Chinese broccoli, Brussels sprouts, Chinese (napa) Cabbage, Chinese mustard, Cauliflower, Cavalo broccoli, Kohlrabi)

### Application Timing

- Apply pre-plant to stubble or soil surface in the fall.
- Apply early pre-plant, pre-plant incorporated, pre-emergence in the spring up to 72 hours before transplanting.

### Application Rates

#### Coarse Textured Soils:

- <1.5% Organic Matter: 2.25 - 3.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.0 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 9.0 fl. oz./acre

#### Medium Textured Soils:

- <1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre
- 1.5%-3.0% Organic Matter: 6.0 - 9.0 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 12.0 fl. oz./acre

#### Fine Textured Soils:

- <1.5% Organic Matter: 3.0 - 6.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 6.0 - 9.0 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 12.0 fl. oz./acre

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of head and stem brassica.

### Application Instructions

- Unless applying pre-plant incorporated, do not incorporate Willowood Sulfen 4SC into the soil after application. Destroying the herbicide barrier by mechanically incorporating can allow weed escapes to occur.
- If applying pre-plant incorporated in the spring, mix thoroughly or shallowly incorporate Willowood Sulfen 4SC into the soil prior to transplanting.
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (<7.0) and lower rates within the specified rate range with higher soil pH (>7.0).

### Application Restrictions

- Do not incorporate into the soil deeper than 2".
- Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.
- Do not apply more than 12 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.
- Do not use on soils classified as "sand" (with <1% organic matter).

### Tank Mixes

Willowood Sulfen 4SC can be split-applied or mixed with burndown herbicides or residual soil herbicides registered for use on head and stem brassica. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).

## BRASSICA, LEAFY GREENS

(Broccoli raab, Chinese (bok choy) cabbage, Collards, Kale, Mizuna, Mustard greens, Mustard spinach, Rape greens)

### Application Timing

- Apply pre-plant to stubble or soil surface in the fall.
- Early pre-plant, pre-plant incorporated, pre-emergence in the spring up to 72 hours before transplanting.

### Application Rates

#### Coarse Textured Soils:

- <1.5% Organic Matter: 2.25 - 3.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.0 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 6.4 fl. oz./acre

#### Medium Textured Soils:

- <1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre
- 1.5%-3.0% Organic Matter: 6.0 - 6.4 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 6.4 fl. oz./acre

#### Fine Textured Soils:

- <1.5% Organic Matter: 3.0 - 6.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 6.0 - 6.4 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 6.4 fl. oz./acre

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of brassica, leafy greens.

### Application Instructions

- Unless applying pre-plant incorporated, do not incorporate Willowood Sulfen 4SC into the soil after application. Destroying the herbicide barrier by mechanically incorporating can allow weed escapes to occur.
- If applying pre-plant incorporated in the spring, mix thoroughly or shallowly incorporate Willowood Sulfen 4SC into the soil prior to transplanting.
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (<7.0) and lower rates within the specified rate range with higher soil pH (>7.0).

### Application Restrictions

- Do not incorporate into the soil deeper than 2".
- Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.
- Do not apply more than 6.4 fl. oz. product per acre (0.2 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 6.4 fl. oz. product per acre (0.2 lb. AI/A) per application.
- Do not use on soils classified as "sand" (with <1% organic matter).

### Tank Mixes

Willowood Sulfen 4SC can be split-applied or mixed with burndown herbicides or residual soil herbicides registered for use on brassica, leafy greens. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).

**CABBAGE**  
**(Transplanted Only)**

**Application Timing**

- Apply pre-plant to stubble or soil surface in the fall or in the spring 60 days prior to planting or up to 72 hours after transplanting.
- If applying pre-emergence before transplant, make broadcast or banded applications.
- Early pre-plant applications can only be made in the states of CO, ID, MI, MN, MT, NE, ND, OR, SD, WA, WI, and WY.

**Application Rates**

**Coarse Textured Soils:**

- <1.5% Organic Matter: 2.25 - 3.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.0 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 9.0 fl. oz./acre

**Medium Textured Soils:**

- <1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre
- 1.5%-3.0% Organic Matter: 6.0 - 9.0 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 12.0 fl. oz./acre

**Fine Textured Soils:**

- <1.5% Organic Matter: 3.0 - 6.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 6.0 - 9.0 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 12.0 fl. oz./acre

See Soil Categories chart for additional information.

**Important**

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of cabbage.

**Application Instructions**

- Unless applying pre-plant incorporated, do not incorporate Willowood Sulfen 4SC into the soil after application. Destroying the herbicide barrier by mechanically incorporating can allow weed escapes to occur.
- If applying pre-plant incorporated in the spring, mix thoroughly or shallowly incorporate Willowood Sulfen 4SC into the soil prior to transplanting.
- If applying pre-emergence, applications before transplant can be broadcast or banded.
- Pre-emergence applications up to 72 hours after transplant should be a banded treatment in the row middles.
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (<7.0) and lower rates within the specified rate range with higher soil pH (>7.0).

**Application Restrictions**

- Do not incorporate into the soil deeper than 2".
- Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.
- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.
- Do not use on soils classified as "sand" (with <1% organic matter).

**Tank Mixes**

Willowood Sulfen 4SC can be split-applied or mixed with burndown herbicides or soil-applied herbicides registered for use on cabbage. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).

## CITRUS

### Crop Group 10

Australian desert lime, Australian finger lime, Australian round lime, Brown River finger lime, Calamondin, Citron, Citrus hybrids, Grapefruit, Japanese summer Grapefruit, Kumquat, Lemon, Lime, Mediterranean Mandarin, Mount White lime, New Guinea Wild Lime, Orange (Sour, Sweet), Pummelo, Russell River Lime, Satsuma Mandarin, Sweet Lime, Tachibana Orange, Tahiti Lime, Tangelo, Tangerine (Mandarin), Tangor, Trifoliate Orange, Uniq Fruit, and cultivars varieties of citrus

#### Application Timing

- Make a broadcast soil application when weeds are not present and/or a post-emergence herbicide has been tank mixed with Willowood Sulfen 4SC.
- Make applications to crops that have been established for one full growing season and are healthy and vigorous.
- Apply Willowood Sulfen 4SC when soil is moist and application will be followed by ½" rainfall or irrigation within two weeks after application.
- Time applications to take advantage of normal rainfall and cool temperatures, especially if using drip or micro sprinkler irrigation is used which may not provide uniform incorporation into the soil.

#### Application Instructions

- Apply with ground application equipment only.
- Make a uniform broadcast soil application to orchard and vineyard floors, to berry beds, and furrows.
- Apply in a minimum of 10 gallons of spray solution per acre. The spray solution pH should be 5.0-9.0; nozzles must meet manufacturer's spray volume and pressure specifications for pre-emergence and post-emergence herbicide applications.
- Wrap the trunks of green bark, young vines, and trees with a non-porous wrap, grow tubes, or wax containers to avoid Willowood Sulfen 4SC contact with green tissue.
- Apply as a uniform band application directed to the base of the tree trunk in trees and vines and to the base of the berry and beds in berries.
- **Broadcast Applications:** Make a single application of 4-12 fl. oz./acre (0.125-0.375 lb. AI/A).
- **Banded Applications:** Refer to the following chart for the appropriate rate and volume of Willowood Sulfen 4SC to be applied. Willowood Sulfen 4SC can be applied twice in one year. For band treatments, apply the broadcast rate and volume per acre. To determine these:

$$\text{Band rate} = \frac{\text{Band Width (Ft.)}}{\text{Row Width Feet}} \times \text{Broadcast Rate/Acre}$$

$$\text{Band Volume} = \text{Band Width Feet} \times \text{Broadcast Volume/acre}$$

#### Application Restrictions

- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.
- Do not apply Willowood Sulfen 4SC to green tissue, crop foliage, or fruit.
- Do not make aerial applications.
- Do not apply after petal fall unless using a hooded or shielded sprayer to avoid contact with foliage and fruit.
- Do not apply when heavy crop trash is present (leaves/branches/weed residue). Clean the area to be treated prior to applying Willowood Sulfen 4SC.
- Do not apply to powdery soils or soils where windy conditions may displace soil unless soil can be irrigated immediately after treatment.
- Pre-Harvest Interval (PHI): 3 days
- If banded treatments are made, wait a minimum of 60 days between applications. Do not exceed the seasonal maximum use rate.

#### Tank Mixes

Willowood Sulfen 4SC can be tank mixed with other pre-emergence and post-emergence burndown herbicides labeled for use on listed crops. Refer to the tank mix partner label for the proper use directions and restrictions. Use the most restrictive label and precautions of the tank mix product(s). Do not tank mix sulfentrazone-containing products with flumioxazin.

#### Replanting in New or Established Orchards and Vineyards

Wait at least 30 days after applying Willowood Sulfen 4SC before replanting trees and vines in newly planted and established orchards and vineyards. Use untreated soil when replanting trees and vines.

#### Control/Suppression of Sedge/Nutsedge

- Make a post-emergence application of Willowood Sulfen 4SC at 12 fl. oz./acre (0.375 lb. AI/A).
- Use a 25% v/v non-ionic surfactant (NIS).
- Post-emergence applications may be most effective since Willowood Sulfen 4SC is absorbed into the plant through the foliage and roots.
- Pre-emergence applications of Willowood Sulfen 4SC will suppress sedges, but will not provide complete control.
- For optimal control of purple nutsedge, make split applications of Willowood Sulfen 4SC. Make an initial application of 4-6 fl. oz./acre followed by a 2<sup>nd</sup> application to actively growing purple nutsedge. DO NOT exceed the maximum application rate of 12 fl. oz./acre (0.375 lb. AI/A). Optimal control may not occur until the 2<sup>nd</sup> year after the initial application of Willowood Sulfen 4SC.

**CORN (Field, Seed, Pop)**  
**(For Use Only with GMO Varieties Tolerant to PPO Herbicides)**

<b>Application Timing</b> <ul style="list-style-type: none"> <li>• Apply pre-plant to stubble or soil surface in the fall before spring planting.</li> <li>• Apply early pre-plant, pre-plant incorporated, pre-emergence in the spring 45 days prior to planting or up to 3 days after planting if seed furrow is closed and seedlings have not broken soil surface.</li> </ul>	
<b>Application Rates</b> <b>Coarse Textured Soils:</b> <ul style="list-style-type: none"> <li>• Up to 3.0% Organic Matter: 3.0 - 4.5 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre</li> </ul> <b>Medium Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 4.5 - 6.75 fl. oz./acre</li> </ul> <b>Fine Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 3.75 - 5.25 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 4.5 - 6.75 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 6.0 - 8.0 fl. oz./acre</li> </ul> <p>See Soil Categories chart for additional information.</p>	<b>Important</b> <ul style="list-style-type: none"> <li>• Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.</li> <li>• Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of corn.</li> <li>• Moisture (rain or snow) should occur after application to move the product into the soil. If dry conditions persist, a shallow incorporation may be needed.</li> </ul>
<b>Application Instructions</b> <ul style="list-style-type: none"> <li>• Early pre-plant, pre-plant incorporated, post-emergence in the spring after planting: broadcast or banded soil application.</li> <li>• Willowood Sulfen 4SC can be applied in conventional, conservation, reduced, or no tillage cropping systems.</li> <li>• For applications in the fall or up to 14 days prior to planting in the spring, use the mid to higher rate within the specified rate range for your soil type, because of the extended time period between application and planting.</li> <li>• If applying pre-plant incorporated in the spring, mix thoroughly or shallowly incorporate Willowood Sulfen 4SC into the soil using a field cultivator, disk harrower, field finisher, or other correctly adjusted incorporation tool.</li> <li>• Make a split application or sequential application if treating difficult to control weeds and/or late emerging weeds.</li> <li>• Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (&lt;7.0) and lower rates within the specified rate range with higher soil pH (&gt;7.0).</li> <li>• Minimize soil disturbance when planting into soil treated with Willowood Sulfen 4SC.</li> </ul>	
<b>Application Restrictions</b> <ul style="list-style-type: none"> <li>• Do not disturb the soil surface after application.</li> <li>• Do not apply to frozen or snow-covered soil.</li> <li>• Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>• Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.</li> <li>• Do not use on soils classified as "sand" (with &lt;1% organic matter).</li> <li>• Do not incorporate into the soil deeper than 2".</li> </ul>	
<b>Tank Mixes</b> Willowood Sulfen 4SC can be mixed with burndown herbicides or residual soil herbicides to control emerged weeds. Willowood Sulfen 4SC can be mixed with insecticides to control cutworms, armyworms, or other insect pests. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s). Willowood Sulfen 4SC can be mixed with insecticides that control cutworms, armyworms, and other insect pests.	

## BEANS AND PEAS (DRY SHELLED)

Dried cultivars of bean (*Lupinus*); bean (*Phaseolus*) (includes field bean, kidney bean, lima bean (dry), navy bean, pinto bean, tepary bean); bean (*Vigna*) (includes adzuki bean, blackeyed pea, catjang, cowpea, crowder pea, moth bean, lentil, mung bean, rice bean, southern pea, urd bean); broad bean (dry); chickpea; guar; lablab bean; pea (*Pisum*) (includes field pea), and pigeon pea

### Application Timing

- Apply to stubble or soil surface.
- Make early pre-plant applications in the fall before the spring growing season in the states of CO, ID, KS, MI, MN, MT, NE, ND, OR, SD, WA, WI, and WY.
- Apply in the spring 60 days prior to planting or up to 3 days after planting if seed furrow is completely closed, and if seedlings have not broken the soil furrow.

### Application Rates

#### Coarse Textured Soils:

- <1.5% Organic Matter: 2.25 - 3.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.0 - 4.5 fl. oz./acre
- >3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre

#### Medium Textured Soils:

- <1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 4.5 - 6.75 fl. oz./acre

#### Fine Textured Soils:

- <1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre
- 1.5%-3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 5.25 - 8.0 fl. oz./acre

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties of dry beans and peas.
- Planting in less than 1" in depth or inadequate seed furrow closure or poor growing conditions (disease, low temperature, soil compaction, excessive moisture) can cause crop injury.
- Moisture (rain or snow) should occur after application to move the product into the soil. If dry conditions persist, a shallow incorporation may be needed.

### Application Instructions

- When applying pre-plant incorporated in the fall, do not incorporate Willowood Sulfen 4SC into the soil after application. Destroying the herbicide barrier by mechanically incorporating can allow weed escapes to occur.
- If applying pre-plant incorporated in the spring earlier than 3 weeks prior to planting, use the higher rate within the specified rate range listed in the **Application Rates** section for appropriate soil and organic matter type.
- If applying Willowood Sulfen 4SC pre-plant incorporated in the spring prior to planting reduced and conventional tillage dry beans and dry peas, mix thoroughly or shallowly incorporate Willowood Sulfen 4SC into the soil.
- Wait a minimum of 7 days after application to plant in coarse textured soils with <1.5% organic matter.
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (<7.0) and lower rates within the specified rate range with higher soil pH (>7.0).
- Reduce rate of Willowood Sulfen 4SC on coarse textured soil with organic matter less than 1.5% and pH of 7.8 or higher, or on highly eroded soils, or in areas of calcareous outcroppings.

### Application Restrictions

- Do not incorporate into the soil deeper than 2".
- Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.
- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per application.
- Do not use on soils classified as "sand" (with <1% organic matter).
- Do not apply Willowood Sulfen 4SC if seedlings are close to soil surface or crop has emerged.

### Tank Mixes

Willowood Sulfen 4SC can be split-applied or mixed with burndown herbicides or soil-applied herbicides registered for use on dry beans and peas. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).

## FALLOW OR POST-HARVEST BURNDOWN

### Application Timing

- Apply post-harvest in the fall to stubble or soil surface.
- Apply in the spring pre-emergence as a fallow treatment.
- Fall application can be made in the states of MN, ND, SD, MT, CO, NE, WY, ID, OR, WI, or MI.
- Spring application can be made to existing fallow fields of asparagus, cabbage, corn, dry shell peas and beans, horseradish, limas, mint, peanuts, potatoes, soybeans, sugarcane, sunflowers, or tobacco.

### Application Rates

#### Coarse Textured Soils:

- <1.5% Organic Matter: 3.0 - 3.75 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.75 - 5.25 fl. oz./acre
- >3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre

#### Medium Textured Soils:

- <1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 4.5 - 8.0 fl. oz./acre

#### Fine Textured Soils:

- <1.5% Organic Matter: 3.75 - 5.25 fl. oz./acre
- 1.5%-3.0% Organic Matter: 4.5 - 6.75 fl. oz./acre
- >3.0% Organic Matter: 5.25 - 8.0 fl. oz./acre

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Follow rotational crop guidelines listed on this table when planting crops in the next season.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties of given crop species.
- Moisture (rain or snow) should occur after application to move the product into the soil. If dry conditions persist, a shallow incorporation may be needed.

### Application Instructions

- Apply Willowood Sulfen 4SC to stubble or soil surface in the fall, or as a fallow treatment in the spring.
- If weed size is such that the weeds interfere with Willowood Sulfen 4SC getting to the soil surface, a separate burndown herbicide should be used prior to application of Willowood Sulfen 4SC.
- Use higher application rates within the specified rate range, or more than one application of a burndown herbicide, if necessary, to remove emerged weeds.
- If making aerial application, use higher listed spray volumes of burndown herbicide to control dense weeds or canopy.
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (<7.0) and lower rates within the specified rate range with higher soil pH (>7.0).

### Application Restrictions

- Do not incorporate into the soil.
- Do not disturb the soil surface once Willowood Sulfen 4SC has been applied.
- Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.
- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per application.
- Do not use on soils classified as "sand" (with <1% organic matter).

### Tank Mixes

Willowood Sulfen 4SC can be mixed with burndown herbicides or residual soil herbicides to control emerged weeds. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).

## FLAX

<b>Application Timing</b> <ul style="list-style-type: none"> <li>Apply Willowood Sulfen 4SC as a pre-emergence treatment prior to planting up to just before seedling emergence.</li> </ul>	
<b>Application Rates</b> <b>Coarse Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 2.25 - 3.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 3.0 - 4.5 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre</li> </ul> <b>Medium Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 4.5 - 6.75 fl. oz./acre</li> </ul> <b>Fine Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 3.75 - 5.25 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 4.5 - 6.75 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 6.0 - 8.0 fl. oz./acre</li> </ul> <p>See Soil Categories chart for additional information.</p>	<b>Important</b> <ul style="list-style-type: none"> <li>Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.</li> <li>Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of flax.</li> <li>Planting less than 1" in depth or inadequate seed furrow closure or poor growing conditions (diseases, low temperature, soil compaction, excessive moisture) can also cause adverse crop response.</li> <li>Extended periods of dry weather can reduce weed control.</li> </ul>
<b>Application Instructions</b> <ul style="list-style-type: none"> <li>Apply Willowood Sulfen 4SC as a pre-emergent treatment prior to planting up just before seedling emergence.</li> <li>Willowood Sulfen 4SC can be followed with a post-emergence flax herbicide.</li> <li>Wait a minimum of 7 days after application to plant in coarse textured soils with &lt;1.5% organic matter.</li> <li>Eliminate use or reduce rate of Willowood Sulfen 4SC to 3.0 fl. oz./acre (0.94 lb. AI/A) on coarse textured soil with organic matter &lt;1.5% and pH of 7.8 or higher, or on highly eroded soils, or in areas of calcareous outcroppings to minimize crop injury.</li> <li>Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (&lt;7.0) and lower rates within the specified rate range with higher soil pH (&gt;7.0).</li> </ul>	
<b>Application Restrictions</b> <ul style="list-style-type: none"> <li>Do not apply Willowood Sulfen 4SC after flax seedlings are close to soil surface or have emerged.</li> <li>Do not incorporate into the soil any deeper than 2".</li> <li>Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.</li> <li>Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.</li> <li>Do not use on soils classified as "sand" (with &lt;1% organic matter).</li> </ul>	
<b>Tank Mixes</b> Willowood Sulfen 4SC can be applied alone or in combination with other herbicides labeled for use on flax. Tank mix Willowood Sulfen 4SC with burndown herbicides to control emerged weeds. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).	

**FRUITING VEGETABLES (except Cucurbits) and OKRA**

Eggplant, groundcherry (*Physalis* spp.), pepino, pepper (includes bell pepper, chili pepper, cooking pepper, okra, pimento, sweet pepper), tomatillo, tomato

<b>Application Timing</b> <ul style="list-style-type: none"> <li>Make applications before transplanting.</li> </ul>	
<b>Application Rates</b> <b>Coarse Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 2.25 - 3.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 3.0 - 6.0 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 6.0 - 9.0 fl. oz./acre</li> </ul> <b>Medium Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 6.0 - 9.0 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 6.0 - 12.0 fl. oz./acre</li> </ul> <b>Fine Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 3.0 - 6.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 6.0 - 9.0 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 6.0 - 12.0 fl. oz./acre</li> </ul> <p>See Soil Categories chart for additional information.</p>	<b>Important</b> <ul style="list-style-type: none"> <li>Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.</li> <li>Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of fruiting vegetables.</li> </ul>
<b>Application Instructions</b> <ul style="list-style-type: none"> <li>Apply Willowood Sulfen 4SC as a pre-emergence treatment (broadcast or banded) to fruiting vegetables.</li> <li>Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (&lt;7.0) and lower rates within the specified rate range with higher soil pH (&gt;7.0).</li> </ul>	
<b>Application Restrictions</b> <ul style="list-style-type: none"> <li>Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.</li> <li>Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.</li> <li>Do not use on soils that contain less than 1% organic matter (soils classified as "sand").</li> </ul>	

**GRAPES**

(raisin, table and juice, wine, Amur river grape)

<b>Application Timing</b> <ul style="list-style-type: none"> <li>Make a broadcast soil application when weeds are not present and/or a post-emergence herbicide has been tank mixed with Willowood Sulfen 4SC.</li> <li>Make applications to crops that have been established for one full growing season and are healthy and vigorous.</li> <li>Apply Willowood Sulfen 4SC when soil is moist and application will be followed by ½" rainfall or irrigation within two weeks after application.</li> <li>Time applications to take advantage of normal rainfall and cool temperatures, especially if drip or micro sprinkler irrigation is used which may not provide uniform incorporation into the soil.</li> </ul>
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Continued on next page

## GRAPES (continued)

### Application Instructions

- Apply with ground application equipment only.
- Make a uniform broadcast soil application to orchard and vineyard floors, to berry beds, and furrows.
- Apply in a minimum of 10 gallons of spray solution per acre. The spray solution pH should be 5.0-9.0; nozzles must meet manufacturer's spray volume and pressure specifications for pre-emergence and post-emergence herbicide applications.
- Wrap the trunks of green bark, young vines, and trees with a non-porous wrap, grow tubes, or wax containers to avoid Willowood Sulfen 4SC contact with green tissue.
- Apply as a uniform band application directed to the base of the tree trunk in trees and vines and to the base of the berry and beds in berries.
- **Broadcast Applications:** Make a single application of 4-12 fl. oz./acre (0.125-0.375 lb. AI/A).
- **Banded Applications:** Refer to the following chart for the appropriate rate and volume of Willowood Sulfen 4SC to be applied. Willowood Sulfen 4SC can be applied twice in one year. For band treatments, apply the broadcast rate and volume per acre. To determine these:

$$\text{Band rate} = \frac{\text{Band Width (Ft.)}}{\text{Row Width Feet}} \times \text{Broadcast Rate/Acre}$$

$$\text{Band Volume} = \text{Band Width Feet} \times \text{Broadcast Volume/acre}$$

### Application Restrictions

- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.
- Do not apply Willowood Sulfen 4SC to green tissue, crop foliage, or fruit.
- Do not make aerial applications.
- Do not apply after petal fall unless using a hooded or shielded sprayer to avoid contact with foliage and fruit.
- Do not apply when heavy crop trash is present (leaves/branches/weed residue). Clean the area to be treated prior to applying Willowood Sulfen 4SC.
- Do not apply to powdery soils or soils where windy conditions may displace soil unless soil can be irrigated immediately after treatment.
- Pre-Harvest Interval (PHI): 3 days
- If banded treatments are made, wait a minimum of 60 days between applications. Do not exceed the seasonal maximum use rate.

### Tank Mixes

Willowood Sulfen 4SC can be tank mixed with other pre-emergence and post-emergence burndown herbicides labeled for use on listed crops. Refer to the tank mix partner label for the proper use directions and restrictions. Use the most restrictive label and precautions of the tank mix product(s). Do not tank mix sulfentrazone-containing products with flumioxazin.

### Replanting in New or Established Orchards and Vineyards

Wait at least 30 days after applying Willowood Sulfen 4SC before replanting trees and vines in newly planted and established orchards and vineyards. Use untreated soil when replanting trees and vines.

### Control/Suppression of Sedge/Nutsedge

- Make a post-emergence application of Willowood Sulfen 4SC at 12 fl. oz./acre (0.375 lb. AI/A).
- Use a 25% v/v non-ionic surfactant (NIS).
- Post-emergence applications may be most effective since Willowood Sulfen 4SC is absorbed into the plant through the foliage and roots.
- Pre-emergence applications of Willowood Sulfen 4SC will suppress sedges, but will not provide complete control.
- For optimal control of purple nutsedge, make split applications of Willowood Sulfen 4SC. Make an initial application of 4-6 fl. oz./acre followed by a 2<sup>nd</sup> application to actively growing purple nutsedge. DO NOT exceed the maximum application rate of 12 fl. oz./acre (0.375 lb. AI/A). Optimal control may not occur until the 2<sup>nd</sup> year after the initial application of Willowood Sulfen 4SC.

## HORSERADISH

### Application Timing

- Apply pre-plant in the fall before the growing season.
- Apply in the spring early (pre-plant, pre-emergence, pre-plant incorporated).
- Early pre-plant applications can only be made in the states of CO, ID, MI, MN, MT, NE, ND, OR, SD, WA, WI, or WY.

### Application Rates

#### Coarse Textured Soils:

- <1.5% Organic Matter: 2.25 - 4.5 fl. oz./acre
- 1.5%-3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 7.5 fl. oz./acre

#### Medium or Fine Textured Soils:

- <1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre
- 1.5%-3.0% Organic Matter: 6.0 - 8.0 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 8.0 fl. oz./acre

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of horseradish.
- Moisture (rain or snow) should occur after application to move the product into the soil.

### Application Instructions

- Apply Willowood Sulfen 4SC to stubble or soil surface.
- If applying pre-plant in the spring, apply Willowood Sulfen 4SC 60 days prior to planting up to planting.
- If making pre-emergence applications before planting, and up to 5 days before crop emergence can be broadcast or banded.
- If applying after crop emergence, apply Willowood Sulfen 4SC to row middles as a banded treatment.
- Use higher rates within the specified rate range if soil is clay or has >1% organic matter.
- If applying pre-plant incorporated in the spring, prior to planting, mix thoroughly or shallowly incorporate Willowood Sulfen 4SC into the soil.
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (<7.0) and lower rates within the specified rate range with higher soil pH (>7.0).

### Application Restrictions

- Do not incorporate into the soil deeper than 2".
- Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.
- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per application.
- Do not use on soils classified as "sand" (with <1% organic matter).
- Do not apply Willowood Sulfen 4SC if seedlings are close to soil surface or have emerged (apply a banded treatment to row middles).

### Tank Mixes

Willowood Sulfen 4SC can be split-applied or mixed with burndown herbicides, residual soil herbicides or other pesticides to control emerged weeds. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).

**LIMA BEANS, SUCCULENT**  
(Tennessee Only)

<b>Application Timing</b> <ul style="list-style-type: none"> <li>• Make pre-emergence applications before transplanting.</li> </ul>	
<b>Application Rates</b> <b>Coarse Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 2.25 - 3.75 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 3.0 - 4.5 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre</li> </ul> <b>Medium Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 3.0 - 6.0 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre</li> </ul> <b>Fine Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 3.75 - 6.0 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 5.25 - 6.0 fl. oz./acre</li> </ul> <p>See Soil Categories chart for additional information.</p>	<b>Important</b> <ul style="list-style-type: none"> <li>• Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.</li> <li>• Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of lima beans.</li> <li>• Planting less than 1" in depth or inadequate seed furrow closure or poor growing conditions (diseases, low temperature, soil compaction, excessive moisture) can also cause adverse crop response.</li> <li>• Extended periods of dry weather can reduce weed control.</li> </ul>
<b>Application Instructions</b> <ul style="list-style-type: none"> <li>• Apply Willowood Sulfen 4SC as a pre-emergence treatment.</li> <li>• Apply Willowood Sulfen 4SC in at least 10 gallons of finished spray per acre.</li> <li>• Apply with ground equipment.</li> <li>• Wait a minimum of 7 days after application to plant in coarse soils with &lt;1.5% organic matter.</li> <li>• Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (&lt;7.0) and lower rates within the specified rate range with higher soil pH (&gt;7.0).</li> <li>• Reduce rate of Willowood Sulfen 4SC on coarse textured soil with organic matter less than 1.5% and pH of 7.8 or higher, or on highly eroded soils, or in areas of calcareous outcroppings.</li> </ul>	
<b>Application Restrictions</b> <ul style="list-style-type: none"> <li>• Do not apply more than 6.0 fl. oz. product per acre (0.1875 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>• Do not apply more than 6.0 fl. oz. product per acre (0.1875 lb. AI/A) per application.</li> <li>• Do not incorporate Willowood Sulfen 4SC into the soil.</li> </ul>	

**MELONS**  
**(Citron melon, muskmelon, watermelon)**

<b>Application Timing</b> <ul style="list-style-type: none"> <li>Make pre-emergence applications 48 hours prior to planting up to just before seedling emergence.</li> </ul>	
<b>Application Rates</b> <b>Coarse Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 2.25 - 3.75 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 3.0 - 4.5 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre</li> </ul> <b>Medium Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 3.0 - 6.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre</li> </ul> <b>Fine Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 3.75 - 6.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 5.25 - 6.0 fl. oz./acre</li> </ul> <p>See Soil Categories chart for additional information.</p>	<b>Important</b> <ul style="list-style-type: none"> <li>Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.</li> <li>Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of melons.</li> <li>Planting less than 1" in depth or inadequate seed furrow closure or poor growing conditions (diseases, low temperature, soil compaction, excessive moisture) can also cause adverse crop response.</li> <li>Extended periods of dry weather can reduce weed control.</li> </ul>
<b>Application Instructions</b> <ul style="list-style-type: none"> <li>Apply Willowood Sulfen 4SC as a pre-emergence treatment from 48 hours prior to planting up to just before seedling emergence.</li> <li>Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (&lt;7.0) and lower rates within the specified rate range with higher soil pH (&gt;7.0).</li> </ul>	
<b>Application Restrictions</b> <ul style="list-style-type: none"> <li>Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per application.</li> <li>Do not apply Willowood Sulfen 4SC if seedlings are close to the soil surface or have emerged.</li> <li>Do not use on soils classified as "sand" (with &lt;1% organic matter).</li> </ul>	
<b>Tank Mixes</b> Willowood Sulfen 4SC can be split-applied or mixed with burndown herbicides to control emerged weeds. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).	

## MINT

<b>Application Timing</b> <ul style="list-style-type: none"> <li>Apply to established strands of dormant mint or newly planted mint in the fall or spring, prior to emergence of new growth.</li> </ul>	
<b>Application Rates</b> <b>Coarse Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 4.5 - 6.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 6.0 - 8.0 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 8.0 - 10.1 fl. oz./acre</li> </ul> <b>Medium Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 6.0 - 8.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 8.0 - 10.1 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 10.1 - 12.0 fl. oz./acre</li> </ul> <b>Fine Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 8.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 10.1 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 12.0 fl. oz./acre</li> </ul> <p>See Soil Categories chart for additional information.</p>	<b>Important</b> <ul style="list-style-type: none"> <li>Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.</li> <li>Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties of mint.</li> </ul>
<b>Application Instructions</b> <ul style="list-style-type: none"> <li><b>Dormant Applications:</b> Apply Willowood Sulfen 4SC to established stands of mint in the spring after cultivation is complete, or in the fall after post-harvest cultivation and prior to new growth. Split applications can be made for pre-emergence control of winter and spring annual weeds.</li> <li><b>New Planting Applications:</b> Reduce the rate of application by 25% of the specified rate for newly established mint. Apply Willowood Sulfen 4SC to both weeds and newly established mint.</li> <li>Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (&lt;7.0) and lower rates within the specified rate range with higher soil pH (&gt;7.0).</li> <li>Moisture (rain or overhead irrigation) is required to activate Willowood Sulfen 4SC and move it into the soil.</li> </ul>	
<b>Application Restrictions</b> <ul style="list-style-type: none"> <li>Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.</li> <li>Do not apply Willowood Sulfen 4SC if mint has emerged.</li> <li>Do not use on soils classified as "sand" (with &lt;1% organic matter).</li> <li>Do not apply to mint fields under stress from disease, culture, environment, or disease.</li> </ul>	
<b>Tank Mixes</b> Willowood Sulfen 4SC can be mixed with burndown herbicides to control emerged weeds. Adding a surfactant to the tank mix will enhance weed control. Use the most restrictive label and precautions of the tank mix product(s).	

## PEANUTS

(Southeastern United States Only: AL, GA, MS, NC, SC, VA)

### Application Timing

- Make pre-plant incorporated applications to peanuts up to 14 days prior to planting or up to 12 hours after planting.

### Application Rates

To control Amaranth (spleen), Copperleaf (hophornbeam), Croton (tropic), Crownbeard (golden), Devils Claw, Jimsonweed, Lambsquarters (common), Morningglory (entireleaf & red), apply the following amounts of Willowood Sulfen 4SC: **Coarse Textured Soils:** 4.8 fl. oz./acre

**Medium or Fine Textured Soils:** 6.4 fl. oz./acre

To control Amaranth (palmer), Crabgrass (large & Southern), Eclipta, Goosegrass, Morningglory (pitted & smallflower), Poinsettia (wild\*), Redweed, apply the following amounts of Willowood Sulfen 4SC:

**Coarse Textured Soils:** 6.4 fl. oz./acre

**Medium or Fine Textured Soils:** 8.0 fl. oz./acre

To control Anoda (spurred), Cocklebur (common), Nutsedge (yellow & purple\*\*), Purslane (common), Sida (prickly), Starbur (prickly), apply the following amounts of Willowood Sulfen 4SC:

**Coarse Textured Soils:** 8.0 fl. oz./acre

**Medium or Fine Textured Soils:** 9.6 fl. oz./acre

\* Application rates for wild poinsettia will control initial germination and several continuing germinations.

\*\* Application rates will control purple nutsedge if applied pre-plant incorporated. Partial control (up to 85%) will occur with pre-emergence applications; other application methods will result in 71%-84% control.

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties of peanut.

### Application Instructions

- Apply Willowood Sulfen 4SC broadcast or banded. If making a broadcast application, apply Willowood Sulfen 4SC in a minimum of 10 gallons of water per acre. If making a banded application, proportionately adjust the use rate according to the band width.
- If making a pre-plant incorporated application, mix thoroughly or incorporate Willowood Sulfen 4SC into the soil no deeper than 2".
- Use the next lower application rate if soil pH is >7.

### Application Restrictions

- Do not apply more than 9.6 fl. oz. product per acre (0.3 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 9.6 fl. oz. product per acre (0.3 lb. AI/A) per application.
- Do not use on soils classified as "sand" (with <1% organic matter).
- Do not irrigate crops treated with Willowood Sulfen 4SC with water if soil pH is >9.
- Do not feed livestock peanut forage or hay that has been treated with Willowood Sulfen 4SC.
- Do not apply Willowood Sulfen 4SC to peanut tissue or "at-crack".

### Tank Mixes

Tank mix Willowood Sulfen 4SC with grass herbicides registered for use on peanuts for optimal weed control. Apply Willowood Sulfen 4SC with a post-emergent peanut herbicide for hard to control weeds and/or excessive weed pressure. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).

## POTATOES

### Application Timing

- Make pre-emergence applications by ground or aerial application.
- Apply to soil surface before potatoes emerge, but after planting and drag off.

### Application Rates

#### Coarse Textured Soils:

- $\leq 3.0\%$  Organic Matter: 3.0 - 4.5 fl. oz./acre
- $>3.0\%$  Organic Matter: 4.5 - 6.0 fl. oz./acre

#### Medium Textured Soils:

- $<1.5\%$  Organic Matter: 3.0 - 4.5 fl. oz./acre
- $1.5\%-3.0\%$  Organic Matter: 3.75 - 6.0 fl. oz./acre
- $>3.0\%$  Organic Matter: 5.25 - 6.75 fl. oz./acre

#### Fine Textured Soils:

- $<1.5\%$  Organic Matter: 3.75 - 5.25 fl. oz./acre
- $1.5\%-3.0\%$  Organic Matter: 4.5 - 6.0 fl. oz./acre
- $>3.0\%$  Organic Matter: 6.0 - 8.0 fl. oz./acre

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of potatoes.
- Sangre, Shepody, and Snowden varieties of potatoes have demonstrated sensitivity to Willowood Sulfen 4SC. Test potato varieties to ensure crop tolerance.
- Moisture (rain or irrigation) should occur post-application for Willowood Sulfen 4SC to penetrate soil.
- Crop injury can occur from irrigation with alkaline water with pH  $<7.5$ .
- The amount of Willowood Sulfen 4SC available in soil will significantly increase if irrigation occurs with water with a high pH.
- Younger or stressed crops, or crops treated with higher rates of Willowood Sulfen 4SC are more susceptible to crop injury from higher pH irrigation water. The potential for crop injury decreases as plant growth increases.

### Application Instructions

- Apply Willowood Sulfen 4SC before potatoes emerge to avoid crop injury.
- Mix Willowood Sulfen 4SC in a minimum of 5 gallons of water for aerial applications; use a minimum of 10 gallons of water for ground application.
- If dry conditions exist for 7 days post-application, incorporate Willowood Sulfen 4SC into the soil to a depth no more than 2".
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH ( $<7.0$ ) and lower rates within the specified rate range with higher soil pH ( $>7.0$ ).
- **Chemigation Applications:** Willowood Sulfen 4SC can be applied pre-emergence by chemigation. Use enough water to cover soil surface, but do not apply to point of runoff ( $\frac{1}{4}$ " -  $\frac{1}{2}$ "/acre). Apply Willowood Sulfen 4SC through solid set, lateral move, end tow, hand-move or center-pivot sprinkler irrigation systems. During chemigation, Willowood Sulfen 4SC can be applied with other approved products used for chemigation in potatoes.

### Application Restrictions

- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per application.
- Do not apply Willowood Sulfen 4SC to emerged potatoes.
- Do not use on soils classified as "sand" (with  $<1\%$  organic matter).

### Tank Mixes

Willowood Sulfen 4SC can be mixed with other soil-applied herbicides to control emerged weeds not controlled by Willowood Sulfen 4SC. Willowood Sulfen 4SC can be mixed with burndown herbicides and adjuvants labeled for use on potatoes to control emerged weeds. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).

## RHUBARB

### Application Instructions

- Apply 8 fl. oz./acre (0.25 lb. AI/A).
- Make one post-emergence application just before Rhubarb plants break dormancy at 80 (+/- 5) days before harvest.
- Apply in a minimum of 10 gallons of water per acre.

### Application Restrictions

- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per application.
- Do not make more than one application per acre of Willowood Sulfen 4SC in a 12-month period.
- Do not use on soils classified as "sand" (with <1% organic matter).

## SOYBEANS

### Application Timing

- Apply pre-emergence or pre-plant incorporated in the spring, or in the fall before planting.
- Apply to the soil surface in the spring either pre-plant incorporated or pre-emergence up to 3 days after planting.

### Application Rates

#### Coarse Textured Soils:

- <1.5% Organic Matter: 4.5 - 6.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 6.0 - 8.0 fl. oz./acre
- >3.0% Organic Matter: 8.0 - 10.1 fl. oz./acre

#### Medium Textured Soils:

- <1.5% Organic Matter: 6.0 - 8.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 8.0 - 10.1 fl. oz./acre
- >3.0% Organic Matter: 10.1 - 12.0 fl. oz./acre

#### Fine Textured Soils:

- <1.5% Organic Matter: 8.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 10.1 fl. oz./acre
- >3.0% Organic Matter: 12.0 fl. oz./acre

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific varieties or cultivars of soybeans.
- Crop injury can occur under stressed conditions such as disease, cool temperature, soil pH >7.5, prolonged/excessive moisture, and/or poor agronomic practices.

### Application Instructions

- In the spring, apply in conventional, conservation, or reduced or no-tillage cropping systems.
- If making pre-plant incorporated application in the spring, mix thoroughly and shallowly incorporate into the soil.
- In the fall, apply in conservation and no-tillage cropping systems for burndown of existing crop stubble and weeds and for pre-emergence control of weeds. For best results, fall treatments should be followed up with a spring herbicide application in the following crop season as needed. Apply when temperatures are 55°F to a soil depth of 4". If using a ridge till production system, form ridges or beds prior to application.
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (<7.0) and lower rates within the specified rate range with higher soil pH (>7.0).
- Ground or aerial applications: Mix Willowood Sulfen 4SC in water to make a minimum of 5 gallons of spray solution for aerial application or 10 gallons for ground applications. Use enough spray volume to adequately cover soil. Apply with nozzles that produce a minimum amount of fine droplets, but also allow adequate soil coverage.
- Observe the following date restrictions:
  - Areas north of I-90: Apply after September 30<sup>th</sup>.
  - Areas north of I-70: Apply after October 15<sup>th</sup>.
  - Areas South of I-70: Do not apply in the fall.

Continued on next page

## SOYBEANS (continued)

### Application Restrictions

- Do not apply Willowood Sulfen 4SC more than once per season.
- Do not feed treated soybean forage or soybean hay to livestock.
- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.
- Do not apply Willowood Sulfen 4SC after soybean seeds germinate, seedlings close to soil surface or emerged seedlings.
- Do not use on soils classified as "sand" (with <1% organic matter).
- Do not incorporate Willowood Sulfen 4SC to a depth >2".
- Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.

### Tank Mixes

Willowood Sulfen 4SC can be mixed with burndown herbicides to control emerged weeds. If applying in the fall, mix products with water to make a minimum of 20 gallons of finished spray per acre. If weeds are emerged, COC or MSO adjuvants can be added to the mix for enhanced burndown activity. If applying in the spring, Willowood Sulfen 4SC can be tank mixed with or followed by an application of a post-emergence soybean herbicide. Adding a surfactant to the tank mix will enhance weed control. Use the most restrictive label and precautions of the tank mix product(s).

## SUCCULENT PEAS

*Cajanus cajan* (includes pigeon pea); *Cicer* spp. (includes chickpea and garbanzo bean); *Lens culinaris* (lentil); *Pisum* spp. (includes dwarf pea, garden pea, green pea, English pea, field pea, and edible pod pea)

### Application Rates

#### Coarse Textured Soils:

- <1.5% Organic Matter: 2.25 - 3.75 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.0 - 4.5 fl. oz./acre
- >3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre

#### Medium Textured Soils:

- <1.5% Organic Matter: 3.0 - 6.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre

#### Fine Textured Soils:

- <1.5% Organic Matter: 3.75 - 6.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 5.25 - 6.0 fl. oz./acre

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of succulent peas.
- Planting less than 1" in depth or inadequate seed furrow closure or poor growing conditions (diseases, low temperature, soil compaction, excessive moisture) can also cause adverse crop response.

### Application Instructions

- Make pre-emergence application of Willowood Sulfen 4SC in a minimum of 10 gallons of finished spray per acre.
- Apply with ground equipment.
- Wait a minimum of 7 days after application to plant in coarse textured soils with <1.5% organic matter.
- Reduce rate of Willowood Sulfen 4SC on coarse textured soil with organic matter <1.5% and pH of 7.8 or higher, or on highly eroded soils, or in areas of calcareous outcroppings to minimize crop injury.
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (<7.0) and lower rates within the specified rate range with higher soil pH (>7.0).

### Application Restrictions

- Do not apply more than 6.0 fl. oz. product per acre (0.1875 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 6.0 fl. oz. product per acre (0.1875 lb. AI/A) per application.
- Do not apply Willowood Sulfen 4SC if succulent peas have emerged.
- Do not apply to succulent peas in extended periods of dry weather.
- Do not incorporate Willowood Sulfen 4SC into the soil.

## SUGARCANE

<b>Application Timing</b> <ul style="list-style-type: none"> <li>Apply pre-emergence to newly planted sugarcane.</li> </ul>	
<b>Application Rates</b> <b>Coarse Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 4.5 - 6.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 6.0 - 8.3 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 8.0 - 10.1 fl. oz./acre</li> </ul> <b>Medium Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 6.0 - 8.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 8.0 - 10.1 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 10.1 - 12.0 fl. oz./acre</li> </ul> <b>Fine Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 8.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 10.1 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 12.0 fl. oz./acre</li> </ul> <p>See Soil Categories chart for additional information.</p>	<b>Important</b> <ul style="list-style-type: none"> <li>Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.</li> <li>Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific varieties or cultivars of sugarcane.</li> </ul>
<b>Application Instructions</b> <ul style="list-style-type: none"> <li>Make pre-emergent application to ratoon or newly planted sugarcane, or to sugarcane at lay-by timing (direct spray).</li> <li>Pre-emergent applications can be made broadcast, banded, aerially or with ground equipment.</li> <li>If making aerial application, apply in a minimum of 5 gallons of spray per acre.</li> <li>If making ground application, apply in a minimum of 15 gallons of spray per acre.</li> <li>For all applications, use the higher rate within the specified rate range if soil is &gt;2% organic matter or is clay.</li> <li>Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (&lt;7.0) and lower rates within the specified rate range with higher soil pH (&gt;7.0).</li> </ul>	
<b>Application Restrictions</b> <ul style="list-style-type: none"> <li>Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.</li> <li>Do not use on soils classified as "sand" (with &lt;1% organic matter).</li> <li>Do not allow Willowood Sulfen 4SC to contact crop leaves.</li> <li>Pre-Harvest Interval (PHI): 120 days.</li> </ul>	
<b>Tank Mixes</b> Willowood Sulfen 4SC can be applied with other herbicides and insecticides registered for use on sugarcane to control emerged weeds. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).	

## SUNFLOWER

### Application Timing

- Make pre-plant applications in the fall before spring planting.
- Fall applications allowed in the states of: CO, KS, MN, MT, ND, NE, SD, and WY.
- Make early pre-plant, pre-emergence, and/or pre-plant incorporated applications in the spring prior to planting up to 3 days after planting.

### Application Rates

#### Coarse Textured Soils:

- <1.5% Organic Matter: 3.0 - 3.75 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.0 - 4.5 fl. oz./acre
- >3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre

#### Medium Textured Soils:

- <1.5% Organic Matter: 3.0 - 4.5 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 4.5 - 6.75 fl. oz./acre

#### Fine Textured Soils:

- <1.5% Organic Matter: 3.75 - 5.25 fl. oz./acre
- 1.5%-3.0% Organic Matter: 4.5 - 6.75 fl. oz./acre
- >3.0% Organic Matter: 6.0 - 8.0 fl. oz./acre

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of sunflowers.
- Planting less than 1" in depth or inadequate seed furrow closure or poor growing conditions (diseases, low temperature, soil compaction, excessive moisture) can also cause adverse crop response.
- Moisture (rain or irrigation) should occur post-application for Willowood Sulfen 4SC to penetrate soil.

### Application Instructions

- Apply to stubble or soil surface pre-plant incorporated in the fall.
- Fall applications allowed in the states of: CO, KS, MN, MT, ND, NE, SD, and WY.
- For fall applications, use a mid-high rate within the specified rate range for your soil type and for applications in the spring greater than 3 weeks before planting - use a high rate range for your soil type because of the extended time period between application and planting.
- Make early pre-plant, pre-emergence, and/or pre-plant incorporated applications in the spring prior to planting up to 3 days after planting (if seed furrow is completely closed and seedling have not broken the soil surface).
- Wait a minimum of 7 days after application to plant in coarse textured soils with <1.5% organic matter.
- If making pre-plant incorporated application in the spring to reduced or conventional tillage sunflowers, mix thoroughly or shallowly incorporate Willowood Sulfen 4SC into the soil.
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (<7.0) and lower rates within the specified rate range with higher soil pH (>7.0).

### Application Restrictions

- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per application.
- Do not incorporate Willowood Sulfen 4SC into the soil deeper than 2".
- Do not disturb the soil surface after Willowood Sulfen 4SC treatment.
- Do not use on soils classified as "sand" (with <1% organic matter).
- Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.

### Tank Mixes

Willowood Sulfen 4SC can be tank mixed or split-applied with burndown herbicides to control emerged weeds. Willowood Sulfen 4SC can be tank mixed with other herbicides registered for use on sunflowers to enhance weed control and suppression. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).

**TOBACCO**  
**(Burley, Flue-Cured and Dark)**

<b>Application Timing</b> <ul style="list-style-type: none"> <li>• Make pre-plant incorporated applications or pre-emergence applications to tobacco transplants.</li> <li>• Fall applications allowed in the states of: CO, KS, MN, MT, ND, NE, SD, and WY.</li> <li>• Make early pre-plant, pre-emergence, and/or pre-plant incorporated applications in the spring prior to planting up to 3 days after planting.</li> </ul>	
<b>Application Rates</b> <b>Coarse Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 4.5 - 6.0 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 6.0 - 8.0 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 8.0 - 10.1 fl. oz./acre</li> </ul> <b>Medium Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 6.0 - 8.0 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 8.0 - 10.1 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 10.1 - 12.0 fl. oz./acre</li> </ul> <b>Fine Textured Soils:</b> <ul style="list-style-type: none"> <li>• &lt;1.5% Organic Matter: 8.0 fl. oz./acre</li> <li>• 1.5%-3.0% Organic Matter: 10.1 fl. oz./acre</li> <li>• &gt;3.0% Organic Matter: 12.0 fl. oz./acre</li> </ul> <p>See Soil Categories chart for additional information.</p>	<b>Important</b> <ul style="list-style-type: none"> <li>• Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.</li> <li>• Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of tobacco.</li> <li>• Poor growing conditions (diseases, low temperature, soil compaction/pH, excessive moisture, drought, poor agronomic practices or other unfavorable conditions) can also cause adverse crop response.</li> <li>• If heavy rainfall occurs after transplant or transplants are set shallowly in soil, temporary stunting can occur.</li> <li>• Observe responsible transplanting practices to avoid exposure of transplants to Willowood Sulfen 4SC to avoid crop injury.</li> </ul>
<b>Application Instructions</b> <ul style="list-style-type: none"> <li>• Make broadcast applications to the soil surface pre-plant or pre-plant incorporated in a minimum of 10 gallons of finished product per acre from 14 days to 12 hours before transplanting tobacco.</li> <li>• If making pre-plant incorporated application, mix thoroughly or shallowly incorporate Willowood Sulfen 4SC into the soil.</li> <li>• If applying in non-bedded fields (raised beds not formed prior to transplanting) and making a soil surface application of Willowood Sulfen 4SC, use light finishing equipment to remove equipment tracks from the field post-application.</li> <li>• If applying to bedded fields (raised beds formed prior to transplanting), any dragging or knocking down of beds prior to transplanting must occur prior to application of Willowood Sulfen 4SC.</li> <li>• New tobacco transplants can be replanted if the first transplant does not produce a uniform stand. If replanted: 1) Do not re-treat fields with a second application of Willowood Sulfen 4SC or any other sulfentrazone-containing product; 2) Do not reform beds prior to replanting; plant new transplants into existing beds that have already been treated with Willowood Sulfen 4SC.</li> <li>• Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (&lt;7.0) and lower rates within the specified rate range with higher soil pH (&gt;7.0).</li> </ul>	
<b>Application Restrictions</b> <ul style="list-style-type: none"> <li>• Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>• Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.</li> <li>• Do not incorporate Willowood Sulfen 4SC into the soil deeper than 2".</li> <li>• Do not disturb soil once incorporated.</li> <li>• Do not perform other tillage practices that could concentrate Willowood Sulfen 4SC into the soil.</li> <li>• Do not disturb the soil surface after Willowood Sulfen 4SC treatment.</li> <li>• Do not use on soils classified as "sand" (with &lt;1% organic matter).</li> <li>• Do not apply Willowood Sulfen 4SC post-transplant.</li> <li>• Do not apply to shade grown tobacco, tobacco seedling beds, or tobacco in greenhouses.</li> <li>• Do not apply Willowood Sulfen 4SC to frozen or snow-covered soil.</li> <li>• Pre-Harvest Interval (PHI): 14 days</li> </ul>	
<b>Tank Mixes</b> <p>Willowood Sulfen 4SC can be tank mixed with a grass herbicide for optimal control of emerged weeds. Refer to the tank mix partner's label for the proper use rates by weed size. Use the most restrictive label and precautions of the tank mix product(s).</p>	

**TOMATO**  
(Transplanted Only)

<b>Application Timing</b> <ul style="list-style-type: none"> <li>Make pre-emergence applications to tomato transplants.</li> </ul>	
<b>Application Rates</b> <b>Coarse Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 2.25 - 3.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 3.0 - 6.0 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 6.0 - 8.0 fl. oz./acre</li> </ul> <b>Medium Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 6.0 - 4.5 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 6.0 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 8.0 fl. oz./acre</li> </ul> <b>Fine Textured Soils:</b> <ul style="list-style-type: none"> <li>&lt;1.5% Organic Matter: 3.0 - 6.0 fl. oz./acre</li> <li>1.5%-3.0% Organic Matter: 6.0 - 8.0 fl. oz./acre</li> <li>&gt;3.0% Organic Matter: 8.0 fl. oz./acre</li> </ul> <p>See Soil Categories chart for additional information.</p>	<b>Important</b> <ul style="list-style-type: none"> <li>Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.</li> <li>Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of tomato.</li> </ul>
<b>Application Instructions</b> <ul style="list-style-type: none"> <li>Make banded or broadcast applications before transplanting tomatoes.</li> <li>Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (&lt;7.0) and lower rates within the specified rate range with higher soil pH (&gt;7.0).</li> </ul>	
<b>Application Restrictions</b> <ul style="list-style-type: none"> <li>Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).</li> <li>Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.</li> <li>Do not use on soils classified as "sand" (with &lt;1% organic matter).</li> </ul>	

## TREE NUTS

**Crop Group 14:** Almond, Beech Nut, Brazil Nut, Butternut, Cashew, Chinquapin, Filbert (Hazelnut), Hickory Nut, Macadamia Nut (Bush Nut), Pecan, Pistachio, and Walnut (Black and English)

### Application Timing

- Make a broadcast soil application when weeds are not present and/or a post-emergence herbicide has been tank mixed with Willowood Sulfen 4SC.
- Make applications to crops that have been established for one full growing season and are healthy and vigorous.
- Apply Willowood Sulfen 4SC when soil is moist and application will be followed by ½" rainfall or irrigation within two weeks after application.
- Time applications to take advantage of normal rainfall and cool temperatures, especially if using drip or micro sprinkler irrigation is used which may not provide uniform incorporation into the soil.

### Application Instructions

- Apply with ground application equipment only.
- Make a uniform broadcast soil application to orchard and vineyard floors, to berry beds, and furrows.
- Apply in a minimum of 10 gallons of spray solution per acre. The spray solution pH should be 5.0-9.0; nozzles must meet manufacturer's spray volume and pressure specifications for pre-emergence and post-emergence herbicide applications.
- Wrap the trunks of green bark, young vines, and trees with a non-porous wrap, grow tubes, or wax containers to avoid Willowood Sulfen 4SC contact with green tissue.
- Apply as a uniform band application directed to the base of the tree trunk in trees and vines and to the base of the berry and beds in berries.
- **Broadcast Applications:** Make a single application of 4-12 fl. oz./acre (0.125-0.375 lb. AI/A).
- **Banded Applications:** Refer to the following chart for the appropriate rate and volume of Willowood Sulfen 4SC to be applied. Willowood Sulfen 4SC can be applied twice in one year. For band treatments, apply the broadcast rate and volume per acre. To determine these:

$$\text{Band Rate} = \frac{\text{Band Width (Ft.)}}{\text{Row Width Feet}} \times \text{Broadcast Rate/Acre}$$

$$\text{Band Volume} = \text{Band Width Feet} \times \text{Broadcast Volume/acre}$$

### Application Restrictions

- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 12.0 fl. oz. product per acre (0.375 lb. AI/A) per application.
- Do not apply Willowood Sulfen 4SC to green tissue, crop foliage, or fruit.
- Do not make aerial applications.
- Do not apply after petal fall unless using a hooded or shielded sprayer to avoid contact with foliage and fruit.
- Do not apply when heavy crop trash is present (leaves/branches/weed residue). Clean the area to be treated prior to applying Willowood Sulfen 4SC.
- Do not apply to powdery soils or soils where windy conditions may displace soil unless soil can be irrigated immediately after treatment.
- Pre-Harvest Interval (PHI): 3 days
- If banded treatments are made, wait a minimum of 60 days between applications. Do not exceed the seasonal maximum use rate.

### Tank Mixes

Willowood Sulfen 4SC can be tank mixed with other pre-emergence and post-emergence burndown herbicides labeled for use on listed crops. Refer to the tank mix partner label for the proper use directions and restrictions. Use the most restrictive label and precautions of the tank mix product(s). Do not tank mix sulfentrazone-containing products with flumioxazin.

### Replanting in New or Established Orchards and Vineyards

Wait at least 30 days after applying Willowood Sulfen 4SC before replanting trees and vines in newly planted and established orchards and vineyards. Use untreated soil when replanting trees and vines.

### Control/Suppression of Sedge/Nutsedge

- Make a post-emergence application of Willowood Sulfen 4SC at 12 fl. oz./acre (0.375 lb. AI/A).
- Use a 25% v/v non-ionic surfactant (NIS).
- Post-emergence applications are most effective since Willowood Sulfen 4SC is absorbed into the plant through the foliage and roots.
- Pre-emergence applications of Willowood Sulfen 4SC will suppress sedges, but will not provide complete control.
- For optimal control of purple nutsedge, make split applications of Willowood Sulfen 4SC. Make an initial application of 4-6 fl. oz./acre followed by a 2<sup>nd</sup> application to actively growing purple nutsedge. DO NOT exceed the maximum application rate of 12 fl. oz./acre (0.375 lb. AI/A). Optimal control may not occur until the 2<sup>nd</sup> year after the initial application of Willowood Sulfen 4SC.

## TURNIPS

### Application Instructions

- Apply 8 fl. oz./acre (0.25 lb. AI/A).
- Make one post-emergence application 40-60 days before harvest.
- Apply in 10-40 gallons of water per acre.

### Application Restrictions

- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 8.0 fl. oz. product per acre (0.25 lb. AI/A) per application.
- Do not make more than one application per acre of Willowood Sulfen 4SC in a 12-month period.
- Do not use on soils classified as "sand" (with <1% organic matter).

## WHEAT (Spring)

(Pacific Northwest states of ID, OR, and WA only)

### Application Instructions

- Apply 6 fl. oz./acre (0.188 lb. AI/A).
- Make one pre-plant or pre-emergence application 40-60 days before forage cutting and 120 days before grain harvest.
- Apply in 10-40 gallons of water per acre.

### Application Restrictions

- Do not apply more than 6.0 fl. oz. product per acre (0.188 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 6.0 fl. oz. product per acre (0.188 lb. AI/A) per application.
- Do not make more than one application per acre of Willowood Sulfen 4SC in a 12-month period.
- Do not use on soils classified as "sand" (with <1% organic matter).

## VEGETABLE SOYBEAN (EDAMAME)

### Application Timing

- Make pre-emergence applications to edamame.

### Application Rates

#### Coarse Textured Soils:

- <1.5% Organic Matter: 2.25 - 3.75 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.0 - 4.5 fl. oz./acre
- >3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre

#### Medium Textured Soils:

- <1.5% Organic Matter: 3.0 - 6.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 3.75 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre

#### Fine Textured Soils:

- <1.5% Organic Matter: 3.75 - 6.0 fl. oz./acre
- 1.5%-3.0% Organic Matter: 4.5 - 6.0 fl. oz./acre
- >3.0% Organic Matter: 5.25 - 6.0 fl. oz./acre

See Soil Categories chart for additional information.

### Important

- Read and follow all precautions, instructions, rotation crop guidelines, replanting instructions, and any other information listed on this label prior to use.
- Consult with university or extension weed management specialists for information on using Willowood Sulfen 4SC with specific local varieties or cultivars of edamame.
- Optimum control may not be achieved under dry weather conditions.
- Poor growing conditions (diseases, low temperature, soil compaction/pH, excessive moisture, drought, poor agronomic practices or other unfavorable conditions) can also cause adverse crop response.
- Inadequate seed furrow closure and shallow planting (less than 1.0") can result in crop injury.

### Application Instructions

- Apply 6.0 fl. oz./acre (0.1875 lb. AI/A) Willowood Sulfen 4SC.
- Apply using ground equipment in a minimum of 10 gallons of water.
- Use rate is inversely dependent upon soil pH - use higher rates within the specified rate range with lower soil pH (<7.0) and lower rates within the specified rate range with higher soil pH (>7.0).
- If applying Willowood Sulfen 4SC to coarse soil with <1.5% organic matter, wait a minimum of 7 days after application before planting.
- Crop injury may occur when Willowood Sulfen 4SC is applied to textured soil with low organic matter (<1.5%) and soil pH >7.8, or on highly eroded soils, or in areas of calcareous outcroppings. Use the lowest rate within the specified rate range under these conditions.

### Application Restrictions

- Do not apply more than 6.0 fl. oz. product per acre (0.1875 lb. AI/A) per year (12-month period from when Willowood Sulfen 4SC is first applied).
- Do not apply more than 6.0 fl. oz. product per acre (0.1875 lb. AI/A) per application.
- Do not use on soils classified as "sand" (with <1% organic matter).
- Do not incorporate into the soil.

## STORAGE AND DISPOSAL

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

**Pesticide Storage:** STORE ABOVE -4°F TO KEEP PRODUCT FROM FREEZING. If frozen, thaw before use. Observe recirculation directions under Mixing and Handling Instructions for Bulk/Mini-Bulk Containers. Keep out of reach of children and animals. Store in original containers only. Store in a dry place. Carefully open containers. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. To confine spill: Dike surrounding area or absorb with sand, cat litter or commercial clay. Place damaged package in a holding container. Identify contents.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### Container Disposal

**Plastic: Non-Refillable Containers:** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to 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. 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.

**Returnable/Refillable Sealed Containers:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**Mini-Bulk Containers:** These containers are property of Willowood, LLC and are returnable to Willowood, LLC at Willowood, LLC's discretion. These containers are provided for repackaging of Willowood Sulfen 4SC \* and should not be filled with any other product.

**Bulk Drums:** Willowood Sulfen 4SC Bulk drums are returnable to Willowood, LLC for reuse when the container is completely empty. Bulk drums containing product in excess of 1 gallon cannot be accepted for return.

**Container Precautions:** Before refilling, inspect thoroughly for damage such as cracks, punctures, bulges, dents, abrasions, and damaged or worn threads on closure devices. After filling and before transporting, check for leaks. Do not refill or transport a damaged or leaking container.

\*Any dealer wishing to repack Willowood Sulfen 4SC must comply with all Federal, State and local laws pertaining to bulk herbicide handling and possess a signed repackaging agreement from Willowood, LLC.

**IMPORTANT: READ BEFORE USE**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the unopened product container at once.

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

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

**DISCLAIMER OF WARRANTIES:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, WILLOWOOD, LLC, MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. To the extent consistent with applicable law, no agent of Willowood, LLC is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, WILLOWOOD, LLC DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

**LIMITATIONS OF LIABILITY:** TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID OR AT WILLOWOOD, LLC'S ELECTION, THE REPLACEMENT OF PRODUCT.

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