

# WILLOWOOD USA

## WILLOWOOD SULFENTRAZONE MTZ DF

GROUP	5	14	HERBICIDES
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For use on Asparagus, Field Corn (Grain, seed corn, forage and silage), Potato, Soybeans, Sugarcane, and Tomato (transplants only); Turf and IVM

The Registrant intends that this product be used only by individuals/firms certified as licensed pesticide applicators

### ACTIVE INGREDIENTS:

Metribuzin* .....	By Weight 27.0%
Sulfentrazone* .....	18.0%

OTHER INGREDIENTS: ..... 55.0%

TOTAL: ..... 100.0%

\*Willowood Sulfentrazone MTZ DF contains 0.45 lb. of active ingredient per pound of product (0.27 lb. a.i./lb. of metribuzin and 0.18 lb. a.i./lb. of sulfentrazone).

EPA Reg. No. 87290-70

### KEEP OUT OF REACH OF CHILDREN CAUTION

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

#### FIRST AID

<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li><li>• Do not give anything to an unconscious person.</li></ul>
<b>IF IN EYES:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

#### HOT LINE NUMBER

For 24-Hour Medical Emergency Assistance (Human or Animal), call: **1-800-222-1222**. For Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), call CHEMTREC: **1-800-424-9300**.



Manufactured For:  
Willowood, LLC  
1600 NW Garden Valley Blvd. Suite #120  
Roseburg, OR 97471

Net Contents:  
**12 Pounds**

AUTHORITY® MTZ DF is a trademark of FMC Corporation.  
Willowood Sulfentrazone MTZ DF is not sourced from, sponsored by, approved by, endorsed by, or otherwise affiliated with FMC Corporation.

# PRECAUTIONARY STATEMENTS

## HAZARDS TO HUMANS AND DOMESTIC ANIMALS

### CAUTION

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Wear long-sleeved shirt, long pants, socks and shoes.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. 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 thoroughly with soap and water after handling before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling the product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### ENVIRONMENTAL HAZARDS

This pesticide 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 runoff may be hazardous to terrestrial and aquatic plants in neighboring areas. Do not contaminate water when disposing of equipment wash waters or rinsate.

**Groundwater Advisory:** This chemical is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

**Do not use this product on sandy soil types that have <1% organic matter.**

**Surface Water Advisory:** Sulfentrazone can contaminate surface water through spray drift. Under some conditions, sulfentrazone may also have a high potential for runoff into surface water (primarily via dissolution in runoff water), for several to many months post-application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, 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 waters.

#### PHYSICAL/CHEMICAL HAZARDS

Do not mix or allow to come in contact with oxidizing agent. A hazardous chemical reaction may occur.

#### 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:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- 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.

**Re-entry statement: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treatment area until spray has dried.**

### RESISTANCE MANAGEMENT

While the development of resistance is well understood, it is not easily predicted. Therefore, herbicides must be used in conjunction with resistance management strategies in the area. Consult the local or State agricultural advisors for details. If weed resistance develops in the area, this product used alone may not continue to provide sufficient levels of weed control. If the reduced levels of control cannot be attributed to improper application timing, unfavorable weather conditions or abnormally high weed pressure, a resistant strain may have developed.

Use this product in a rotation program with other classes of chemistry and modes of action to reduce the potential for weed resistance. Always apply this product at the specified labelled rates and in accordance with the use directions. Do not use less than specified label rates alone or in tank mixtures. Do not use reduced rates of the tank mix partner. 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. For optimum performance, scout fields carefully and begin applications when weeds are smaller rather than larger. If resistance is suspected, contact the local or State agricultural advisors.

### INTEGRATED WEED PEST MANAGEMENT

Integrate **Willowood Sulfentrazone MTZ DF** into an overall weed management strategy whenever the use of an herbicide is required. Practices known to reduce weed development (tillage, crop competition) and herbicide use (weed scouting, proper application timing, banding) should be followed wherever possible. Consult local agricultural and weed authorities for additional IPM strategies established for your area.

### 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 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.

Product must be used in a manner which will prevent back-siphoning in wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsate.

Do not apply this product through any type of irrigation system, unless explicitly allowed in the directions for use.

### PRODUCT INFORMATION

**Willowood Sulfentrazone MTZ DF** is a water soluble dry flowable formulation for selective pre-emergence or pre-plant incorporated weed control in asparagus, field corn (grain, seed corn, forage and silage), potato, soybeans, sugarcane and transplanted tomatoes; turf and IVM. When applications are made according to the instructions on this label, **Willowood Sulfentrazone MTZ DF** will control listed broadleaf and sedge weeds, and provide suppression of grass weeds listed.

**Willowood Sulfentrazone MTZ DF** mode of action involves product uptake by weed roots and shoots. Applications of **Willowood Sulfentrazone MTZ DF** made as pre-emergence and pre-plant incorporated require rainfall or irrigation to activate the herbicide. The amount of water necessary to activate the product after application is dependent upon soil organic matter content, moisture, and texture. Generally, a minimum of 0.5 to 1.0 inch of rainfall or irrigation water within 7 to 10 days of application is sufficient for activation. Shallow field cultivation may be necessary if minimum moisture threshold is not obtained. **Willowood Sulfentrazone MTZ DF** will provide control or suppression of labeled germinating weeds if there is sufficient moisture to move the product into the soil to target root zones.

#### Soil Types:

**Fine:** clay, clay loam, silty clay, silty clay loam

**Medium:** silt, silty loam, loam, sandy clay, sandy clay loam

**Coarse:** sandy loam, loamy sand, sand

## APPLICATION INSTRUCTIONS

**Willowood Sulfentrazone MTZ DF** is labeled for use in asparagus, field corn (grain, seed corn, forage, and silage), potato, soybeans, sugarcane, and transplanted tomatoes. DO NOT use on any other crops.

Use boom and nozzle sprayers that are equipped with appropriate nozzles and screens, and adjusted to provide optimum spray distribution and coverage at the appropriate operating pressures. Use nozzles that produce minimal amounts of fine spray droplets to avoid spray drift or inadequate foliar coverage and soil coverage. Make applications in a minimum of 10 gallons of finished spray per acre. Be aware that overlaps and slower ground speeds while starting, stopping, or turning while spraying may result in excessive application and subsequent response.

Accurately calibrate the sprayer before application. Check sprayer during application to be sure it is working properly.

Water or liquid fertilizer must be used as the carrier for **Willowood Sulfentrazone MTZ DF** when applications are made alone, or when tank mixed with other labelled crop herbicides. Conduct a jar test to check for compatibility of liquid fertilizer and **Willowood Sulfentrazone MTZ DF** tank mix if the compatibility of the liquid fertilizer and **Willowood Sulfentrazone MTZ DF** is unknown.

Maintain continuous agitation during application. Avoid spray overlap. Shut off spray booms while turning, slowing, or stopping, as over application of product may result. Do not store the spray tank overnight or for any extended period of time with the **Willowood Sulfentrazone MTZ DF** spray mixture remaining in the tank.

Do not mix or load this product within 50 feet of wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This restriction does not apply to plugged abandoned wells or wells that are properly capped and does not apply to impervious pads or mixing/loading areas that are properly diked.

Mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well is strictly prohibited unless on an impervious pad constructed to withstand the weight of the heaviest load that could be on or moved across the pad. The pad must be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rainwater that may fall on the pad. Surface water must not be allowed to flow over or from the pad. To facilitate material removal, the pad must be sloped. A pad that is not under cover must have capacity to hold a minimum of 110% of the capacity of the largest pesticide product container or application equipment that will be on the pad. Covered pads that are completely protected from precipitation must have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment that will be on the pad. The containment capacities must be specified and maintained at all times. Minimum specific containment capacities do not apply to vehicles that deliver pesticides to the mixing/loading site. There may be additional State requirements regarding containment and well setback restrictions. Consult local authorities for additional information.

This product must be used in a manner that will prevent back-siphoning into wells and prevent spills. Dispose of excess pesticide, spray mixtures or rinsates properly.

### Soybean Tolerance

**Willowood Sulfentrazone MTZ DF** has been tested on a number of soybean varieties, however, it has not been tested on all soybean varieties. The vast majority of varieties tested have demonstrated tolerance when the product is used according to label directions for **Willowood Sulfentrazone MTZ DF**. A limited number of soybean cultivars have shown some level of crop response when used according to label directions and should not be planted when a **Willowood Sulfentrazone MTZ DF** spray program is planned (see list below).

Do not use **Willowood Sulfentrazone MTZ DF** on the following soybean varieties as adverse crop response may occur: Altona, AP55, AP 71, Asgrow 6520, Burlison, Coker 102, Coker 156, Dassel, GL 3202, Govan, Maple Amber, NB 3665, NKS 1884, Paloma 350, Portage, Regal, Semmes, Terra-Vig 505, Terra-Vig 606, Tracy, Vansoy, and Vinton 81. Consult your local University or Extension Weed Management specialists for additional information on specific local varieties or cultivars for crop tolerance and any other pertinent information on **Willowood Sulfentrazone MTZ DF** under specific local conditions before applying product.

Refer to “**Soybeans - Standard Rate**” table for conventional soybeans or “**Soybeans - Reduced Rate**” table for reduced rate soybeans for the proper application rates. **Willowood Sulfentrazone MTZ DF** must be thoroughly mixed before application or prior to adding another product to the spray tank.

Soybean stunting or stand loss could occur if cool/cold weather or heavy rainfall occurs immediately following a **Willowood Sulfentrazone MTZ DF** application. Yields have not been affected where early season stunting has occurred. Crop injury to soybeans can also occur under the below conditions:

- boom/spray overlap,
- excessive rate for soil type,
- improper spray equipment calibration,
- error in mixing procedures,



- applications made to soils with pH greater than 7.5 or having a calcareous surface area,
- soil incorporation deeper than specified,
- when applications are made with organophosphate pesticides,
- when heavy rains occur after application, particularly in areas that are poorly drained,
- when soybeans are planted at a depth of less than 1 ½ inches, and
- on any soil with less than 0.5% organic matter.

### ROTATIONAL CROP GUIDELINES

CROP	INTERVAL (Months)
Corn (Field <sup>1</sup> ), Soybeans, Sugarcane, Tomatoes (Transplanted Only)	Anytime
Barley, Wheat	4
Rice	10
Alfalfa, Asparagus, Beans (Dry), Cotton <sup>3,4</sup> , Peanuts, Potatoes, Sunflower, Tobacco	12
Sorghum <sup>5</sup>	18
Corn (Sweet <sup>4</sup> ), Any crop not listed <sup>4</sup>	18
Canola <sup>4</sup> , Sugar Beets <sup>2,4</sup>	24

<sup>1</sup> Field corn (includes corn grown for grain, silage, popcorn, seed corn).

<sup>2</sup> A rotation interval of 24 months is allowed with a successful bioassay.

<sup>3</sup> Cotton may be planted after 12 months where **Willowood Sulfentrazone MTZ DF** was applied at rates of 5 oz./acre or less and meets the following conditions:

- pH <7.2
- Medium and fine soils
- Rainfall or irrigation must exceed 15" following application of **Willowood Sulfentrazone MTZ DF** to rotate to cotton.

<sup>4</sup> Crops with rotational intervals that are greater than 12 months after a **Willowood Sulfentrazone MTZ DF** application are the result of crop injury concerns. These crops should only be planted following a successful bioassay.

<sup>5</sup> Sorghum may be planted after 12 months where **Willowood Sulfentrazone MTZ DF** was applied at rates 20 oz./acre or less in the previous cropping season.

The user must follow all use instructions, restrictions, precautions, directions for use, replanting and rotational crop guidelines on this and other product labels used in combination with **Willowood Sulfentrazone MTZ DF**.

### MIXING & LOADING INSTRUCTIONS

Clean spray equipment and remove any remaining pesticide deposits before making applications with **Willowood Sulfentrazone MTZ DF**. Follow the spray tank cleanout procedures specified on the label of product previously applied before adding **Willowood Sulfentrazone MTZ DF** to the spray tank.

#### Willowood Sulfentrazone MTZ DF Applied Alone

- Select the application rate from the appropriate crop section.
- Fill the spray tank with ½ the volume of water required for the treatment area.
- While agitating, open the bottle and add the specified amount of **Willowood Sulfentrazone MTZ DF** for area being treated, measuring directly into the spray tank.
- When mixing **Willowood Sulfentrazone MTZ DF** in a spray tank with anything other than clean water (fertilizer, previous herbicide mixtures, etc.), create a slurry of **Willowood Sulfentrazone MTZ DF** with clean water in a separate container before adding to the spray tank.
- Add the slurry to the spray tank. Rinse the slurry container and add the rinsate to the spray tank. Fill the spray tank to the desired level.
- Allow product to fully disperse, then add the remaining spray water.
- Maintain agitation during filling, mixing and application.
- Apply the **Willowood Sulfentrazone MTZ DF** spray mixture immediately after mixing.

#### Tank Mix Combinations with Willowood Sulfentrazone MTZ DF

- Select the application rate for **Willowood Sulfentrazone MTZ DF** from the appropriate crop section.
- 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.
- Conduct a jar test to ensure compatibility before mixing large volumes.

If a jar test indicates the mixture is compatible, prepare the tank mixture as follows:

- Fill the spray tank with approximately ½ the volume of water required for the treatment area.
- While agitating, open the bottle and add the specified amount of **Willowood Sulfentrazone MTZ DF** for area being treated, measuring directly into the spray tank.

- Allow product to fully disperse.
- Add the specified amount(s) of additional tank mix product(s) in the following order, allowing complete mixing and dispersing after each addition:
  - o dry formulations (e.g., wettable powders, dry flowables)
  - o liquid suspensions (e.g., flowables)
  - o liquids (e.g., EC's), followed by remaining adjuvants and/or carrier
- Add water as necessary.
- Maintain agitation during filling, mixing and application.
- Apply **Willowood Sulfentrazone MTZ DF** spray mixture immediately after mixing.
- Do not store the spray tank overnight or for any extended period for time with **Willowood Sulfentrazone MTZ DF** spray mixture remaining in the tank.

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.

### SPRAY DRIFT MANAGEMENT

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

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

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.

1. The distance of the outermost nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.
3. Observe the regulations of the State where applications are made if they are more stringent requirements than on this label.
4. Applicators must observe and abide by the requirements of the **Spray Drift Reduction Precautions**.

#### Spray Drift Reduction Precaution:

- Avoid spraying in windy conditions with sustained winds above 10 mph which is conducive to spray drift.

#### Spray Drift Reduction Restriction:

- Do not exceed spray pressures of 40 psi unless specified by the manufacturer of drift reducing spray tips and nozzles.

#### Droplet Size Information

Reduce drift potential by applying droplets of size >150 - 200 microns. The optimum drift management strategy is to apply the largest droplets that will provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. Applying larger droplets reduces drift potential, but will not prevent drift when applications are made improperly, or under unfavorable environmental conditions (See **Wind, Temperature and Humidity**, and **Temperature Inversions**).

#### Controlling Spray Droplet Size

**Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows usually produce larger droplets.

**Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

**Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.

**Nozzle Orientation** – 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. 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  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

**Application Height** – Aerial applications should not be made at a height greater than 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. Swath adjustment or offset distance should increase when conditions favor increased drift potential (higher winds, smaller droplets etc.).

**Wind** – Drift potentials are lowest between wind speeds of 3 to 10 miles per hour. However, many factors, including droplet size and equipment type, determine drift potential at any given wind speed. Applications in wind conditions outside of this range could increase the risk of off-target effects and should be avoided. Note that 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 conditions of low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions** – Do not apply **Willowood Sulfentrazone MTZ DF** during temperature inversions because the 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 temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the following 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 a smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicate an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

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

**Off-Target Movement of Willowood Sulfentrazone MTZ DF**

Drift of spray mixtures containing **Willowood Sulfentrazone MTZ DF** must be prevented. Observation of the preceding environmental conditions, correct application equipment design, calibration and application practices will significantly diminish the risk of off-target spray drift. **Willowood Sulfentrazone MTZ DF** can cause significant symptomology by drift onto sensitive crops and other plants. This symptomology may manifest initially as discreet, localized spots where contacted by **Willowood Sulfentrazone MTZ DF** drift mixtures. Depending on concentration of the spray solution and droplets size (effectively determining the dosage of sulfentrazone) and also depending on the inherent sensitivity of the plants involved, these spots or lesions may or may not coalesce. These effects will usually not have lasting effects on plant growth, but will likely reduce the value of affected fruit or foliage where grade or quality are associated with appearance. In severe drift instances with particularly sensitive crops, defoliation of affected foliage could result. Failure to follow these guidelines and environmental prohibitions that then result in off-target movement or drift of **Willowood Sulfentrazone MTZ DF** onto unintended crops or plants, irrespective of severity, constitutes misapplication of this product. Willowood, LLC accepts no responsibility or liability for potential crop effects that may result from such misapplication of **Willowood Sulfentrazone MTZ DF**.

**BAND TREATMENT APPLICATIONS**

For band treatments, apply the broadcast equivalent rate and volume per treated acre. To determine these:

$$\frac{\text{Band Width (Inches)}}{\text{Row Width (Inches)}} \times \text{Broadcast Rate Per Acre} = \text{Band Rate}$$
$$\frac{\text{Band Width (Inches)}}{\text{Row Width (Inches)}} \times \text{Broadcast Volume Per Acre} = \text{Band Volume}$$

### SPRAY EQUIPMENT CLEAN-OUT

**As soon as possible after applying Willowood Sulfentrazone MTZ DF and before using sprayer equipment for any other applications, thoroughly clean sprayer equipment following the procedure below:**

1. Thoroughly drain spray tank, hoses, and spray boom.
2. Rinse the inside of the spray tank with clean water to remove sediment and residues.
3. Flush sprayer hoses, boom and nozzles with clean water.
4. Fill the tank ½ full with clean water, and add tank mix cleaner or ammonia (follow manufacturer's directions for use). Fill the tank to capacity and operate the sprayer for 15 minutes to flush hoses, boom, and nozzles.
5. To ensure thorough cleaning of the spray tank, leave the cleaning solution in the tank, hoses, spray booms and spray nozzles overnight or during storage.
6. Before using the sprayer, drain the spray equipment. Rinse the tank with clean water and flush through the hoses, boom, and nozzles. Clean spray tips and screens separately with the tank mix cleaner or ammonia solution.
7. Dispose of all cleaning solution and rinsate in accordance with Federal, State and local regulations and guidelines.

Do not drain or flush spray equipment or rinsate on or near desirable trees or plants.

Do not contaminate any body of water, including irrigation water that may be used on other crops.

If the sprayer has been stored or left idle, purge the spray boom and nozzles with clean water before starting any application.

If equipment is not cleaned properly, residue of **Willowood Sulfentrazone MTZ DF** can remain in spray equipment, and may be released during subsequent applications, potentially causing adverse crop response to certain crops and other vegetation. Willowood, LLC accepts no liability for any effects due to equipment that is not cleaned properly.



### LIST OF WEEDS CONTROLLED

When used as directed, **Willowood Sulfentrazone MTZ DF** applications made alone or in specified tank mixtures will provide control of the following weeds:

Common Name	Scientific Name
<b>BROADLEAVES</b>	
Amaranth, Palmer	<i>Amaranthus Palmeri</i>
Amaranth, spiny	<i>Amaranthus spinosus</i>
Anoda, spurred	<i>Anoda cristata</i>
Beggarweed, Florida	<i>Desmodium tortuosum</i>
Carpetweed	<i>Mollugo verticillata</i>
Copperleaf, Hophornbeam	<i>Acalypha ostryaefolia</i>
Croton, tropic	<i>Croton glandulosus</i>
Daisy, American	<i>Eclipta alba</i>
Galinsoga, hairy	<i>Galinsoga ciliata</i>
Groundcherry, clammy	<i>Physalis heterophylla</i>
Groundcherry, cutleaf	<i>Physalis angulata</i>
Jimsonweed	<i>Datura stramonium</i>
Kochia	<i>Kochia scoparia</i>
Ladysthumb	<i>Polygonum persicaria</i>
Lambsquarters, common	<i>Chenopodium album</i>
Morningglory, Entireleaf	<i>Ipomoea integruscula</i>
Morningglory, Ivyleaf	<i>Ipomoea hederacea</i>
Morningglory, Palmleaf	<i>Ipomoea Wrightii</i>
Morningglory, purple	<i>Ipomoea turbinata</i>
Morningglory, red	<i>Ipomoea coccinea</i>
Morningglory, smallflower	<i>Jacquemontia tamnifolia</i>
Morningglory, tall	<i>Ipomoea purpurea</i>
Nightshade, Eastern black	<i>Solanum ptycanthum</i>
Nightshade, hairy	<i>Solanum sarrachoides</i>
Nightshade, silverleaf	<i>Solarium elaeagnifolium</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Poorjoe	<i>Diodia teres</i>
Purslane, common	<i>Portulaca oleracea</i>
Senna, coffee	<i>Cassia occidentalis</i>
Sida, prickly (Teaweed)	<i>Sida spinosa</i>
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>
Smell melon	<i>Cucumis melo</i>
Spurge, spotted	<i>Euphorbia maculata</i>
Starbur, bristly	<i>Acanthospermum hispidum</i>
Velvetleaf	<i>Abutilon theophrasti</i>

(continued)

**LIST OF WEEDS CONTROLLED (continued)**

Common Name	Scientific Name
Waterhemp, common	<i>Amaranthus rudis</i>
Waterhemp, tall	<i>Amaranthus tuberculatus</i>
<b>SEDGES*</b>	
Nutsedge, purple	<i>Cyperus rotundus</i>
Nutsedge, yellow	<i>Cyperus esculentus</i>
Sedge, annual	<i>Cares compressus</i>
<b>GRASSES (SUPPRESSION ONLY)</b>	
Broadleaf signalgrass	<i>Brachiaria platyphylla</i>
Crabgrass, large	<i>Digitaria sanguinalis</i>
Crabgrass, smooth	<i>Digitaria ischaemum</i>
Goosegrass	<i>Eleusine indica</i>
Johnsongrass, seedling	<i>Sorghum halepense</i>
Orchardgrass	<i>Dactylis glomerata</i>
Panicum, fall	<i>Panicum dichotomiflorum</i>
Panicum, Texas	<i>Panicum texanum</i>

\*suppression only

**For winter annual weeds (such as those listed below, and/or other emerged weeds), add the specified rate of Rage™, Rage D-tech™, 2,4-D, or glyphosate-based product to Willowood Sulfentrazone MTZ DF applications.**

Chickweed, common	<i>Stellaria media</i>
Deadnettle, purple	<i>Lamium purpureum</i>
Field Pennycress	<i>Thlaspi arvense</i>
Henbit	<i>Lamium amplexicaule</i>
Marestail	<i>Hippuris vulgaris</i>
Mustard spp.	<i>Brassica</i> spp.
Prickly Lettuce	<i>Lactuca serriola</i>
Shepherd's Purse	<i>Capsella bursa pastoris</i>
Speedwell spp.	<i>Veronica</i> spp.
Virginia Pepperweed	<i>Lepidium virginicum</i>

# CROP USE DIRECTIONS

## ASPARAGUS

Make broadcast application of **Willowood Sulfentrazone MTZ DF** to crowns established for one or more years.

Make application in the spring before the crop and weeds emerge. Make application of **Willowood Sulfentrazone MTZ DF** at 12.5 to 33.3 ounces by weight per acre (0.21 – 0.56 lb. a.i./A metribuzin and 0.14 – 0.37 lb. a.i./A sulfentrazone) in 10 to 40 gallons of finished spray per acre. Applications of **Willowood Sulfentrazone MTZ DF** may be made with other pesticides registered for use with asparagus.

### Willowood Sulfentrazone MTZ DF Use Rates - Asparagus

Spring - Pre-Emergence Applications			
Soil Texture	<1.5% Organic Matter (Oz./Acre)	1.5 - 3.0% Organic Matter (Oz./Acre)	>3.0% Organic Matter (Oz./Acre)
Coarse	12.5 – 16.7 (0.21 – 0.28 lb. a.i./A metribuzin and 0.14 – 0.19 lb. a.i./A sulfentrazone)	16.7 – 22.2 (0.28 – 0.37 lb. a.i./A metribuzin and 0.19 – 0.25 lb. a.i./A sulfentrazone)	22.2 – 28.1 (0.37 – 0.47 lb. a.i./A metribuzin and 0.25 – 0.32 lb. a.i./A sulfentrazone)
	16.7 – 22.2 (0.28 – 0.37 lb. a.i./A metribuzin and 0.19 – 0.25 lb. a.i./A sulfentrazone)	22.2 – 28.1 (0.37 – 0.47 lb. a.i./A metribuzin and 0.25 – 0.32 lb. a.i./A sulfentrazone)	28.1 – 33.3 (0.47 – 0.56 lb. a.i./A metribuzin and 0.32 – 0.37 lb. a.i. sulfentrazone)
Medium	16.7 – 22.2 (0.28 – 0.37 lb. a.i./A metribuzin and 0.19 – 0.25 lb. a.i./A sulfentrazone)	22.2 – 28.1 (0.37 – 0.47 lb. a.i./A metribuzin and 0.25 – 0.32 lb. a.i./A sulfentrazone)	28.1 – 33.3 (0.47 – 0.56 lb. a.i./A metribuzin and 0.32 – 0.37 lb. a.i. sulfentrazone)
Fine	22.2 (0.37 lb. a.i./A metribuzin and 0.25 lb. a.i./A sulfentrazone)	28.1 (0.47 lb. a.i./A metribuzin and 0.32 lb. a.i./A sulfentrazone)	33.3 (0.56 lb. a.i./A metribuzin and 0.37 lb. a.i./A sulfentrazone)

See “Soil Types” chart in the **PRODUCT INFORMATION** section of this label for information on soil texture.  
Soils with pH <7.0: Use higher rates.  
Soil with pH >7.0: Use lower rates.

### Weeds Controlled - Willowood Sulfentrazone MTZ DF will provide control of the following weeds in Asparagus when applied according to directions:

Amaranth, Palmer  
Galinsoga, hairy  
Lambsquarters, common  
Morningglory, ivyleaf  
Nightshade, Eastern black  
Nutsedge, yellow  
Pigweed (redroot & smooth)

For information on other weeds not listed above, refer to **LIST OF WEEDS CONTROLLED** section in this label.

### Use Directions - Asparagus

These use directions are crop-specific and are based upon the effects of **Willowood Sulfentrazone MTZ DF** (metribuzin and sulfentrazone) and primary soil and environmental factors, which may impact the product’s activity on various weed species and affect tolerance among crops. The user is required to follow the instructions and guidance previously presented under Product Application Instructions, **Willowood Sulfentrazone MTZ DF** Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weeds Controlled and any other section of this label that pertains to the crop use.

### Use Precautions - Asparagus

Not all varieties or cultivars of a given crop species have been tested with applications of **Willowood Sulfentrazone MTZ DF**. Consult your local University or Extension Weed Management specialists for additional information on specific varieties or cultivars and any other related information on **Willowood Sulfentrazone MTZ DF** under specific local conditions.

### Use Restrictions - Asparagus

- Do not apply more than 0.375 lb./A/year sulfentrazone from all sources.
- Pre-Harvest Interval: 14 days
- Aerial application is prohibited.
- Do not make application of more than 33.3 ounces (0.56 a.i./A metribuzin and 0.37 a.i./A sulfentrazone) by weight per acre per 12-month period.
- Do not apply more than one **Willowood Sulfentrazone MTZ DF** application per acre per 12-month period. The 12-month period is considered to begin upon the initial **Willowood Sulfentrazone MTZ DF** application.
- Do not use on sandy soils classified, which have less than 1% organic matter.

### FIELD CORN (Grain, Seed Corn, forage and silage)

Fall or Spring - Early Pre-Plant, Pre-Emergence & Pre-Plant Incorporated Applications			
Soil Texture	<1.5% Organic Matter (Oz./Acre)	1.5 - 3.0% Organic Matter (Oz./Acre)	>3.0% Organic Matter (Oz./Acre)
<b>Coarse</b>	5.0 – 12.5 (0.08 – 0.21 lb. a.i./A metribuzin and 0.06 – 0.14 lb. a.i./A sulfentrazone)	8.3 – 12.5 (0.14 – 0.21 lb. a.i./A metribuzin and 0.09 – 0.14 lb. a.i./A sulfentrazone)	10.4 – 14.6 (0.18 – 0.25 lb. a.i./A metribuzin and 0.12 – 0.16 lb. a.i./A sulfentrazone)
	8.3 – 12.5 (0.14 – 0.21 lb. a.i./A metribuzin and 0.09 – 0.14 lb. a.i./A sulfentrazone)	10.4 – 16.7 (0.18 – 0.28 lb. a.i./A metribuzin and 0.12 – 0.19 lb. a.i./A sulfentrazone)	12.5 – 18.8 (0.21 – 0.32 lb. a.i./A metribuzin and 0.14 – 0.21 lb. a.i./A sulfentrazone)
<b>Medium</b>	10.4 – 14.6 (0.18 – 0.25 lb. a.i./A metribuzin and 0.12 – 0.16 lb. a.i./A sulfentrazone)	12.5 – 18.8 (0.21 – 0.32 lb. a.i./A metribuzin and 0.14 – 0.21 lb. a.i./A sulfentrazone)	16.7 – 22.2 (0.28 – 0.37 lb. a.i./A metribuzin and 0.19 – 0.25 lb. a.i./A sulfentrazone)
<b>Fine</b>			

See "Soil Types" chart in the **PRODUCT INFORMATION** section of this label for information on soil texture.  
Soils with pH <7.0: Use higher rates.  
Soil with pH >7.0: Use lower rates.

### Fall Applications - Early Pre-Plant Applications

**Willowood Sulfentrazone MTZ DF** application may be made in the fall as a residual treatment before corn planting the following spring. **Willowood Sulfentrazone MTZ DF** can be used alone or in a tank mixture with other herbicides to control labeled broadleaves, sedges and grasses in corn. Make application of **Willowood Sulfentrazone MTZ DF** in conventional tillage or conservation tillage (reduced tillage or no-tillage) cropping systems using specified use rates. **Willowood Sulfentrazone MTZ DF** should be applied to the stubble or soil surface and allow for moisture from rainfall or snow to move the product into the soil. Do not mechanically incorporate product in the fall or spring as doing so can destroy the herbicide barrier allowing weed escapes to occur. To prevent **Willowood Sulfentrazone MTZ DF** runoff from rain or snowmelt that may occur following application, do not make application to frozen soils or existing snow cover. To control emerged weeds in the fall or residual soil herbicides that are labeled for fall use on corn, **Willowood Sulfentrazone MTZ DF** may be tank mixed with other burndown herbicides. 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. Select the correct **Willowood Sulfentrazone MTZ DF** use rate for corn for the soil type and organic matter. The use rate for **Willowood Sulfentrazone MTZ DF** should be the mid to high rate within the labeled rate range for the appropriate soil type and organic matter due to the extended period of time between the fall application and corn planting.

### Spring Applications - Early Pre-Plant and Pre-Emergence

Make pre-plant or pre-emergence application of **Willowood Sulfentrazone MTZ DF** at 5 - 22.2 oz./A (0.08 – 0.37 lb. a.i./A metribuzin and 0.06 – 0.25 lb. a.i./A sulfentrazone) for control or suppression of labeled grass, broadleaf, and sedge weeds including certain herbicide-resistant weeds. Make pre-plant applications within 4 weeks before planting. Make pre-emergence applications from planting up to 3 days post-planting, if seedlings have not broken the soil surface and the seed furrow is completely closed. Corn should be planted at a minimum depth of 2 inches. Make applications by ground equipment in a minimum of 10 gallons of finished spray per acre or by aerial application in a minimum of 5 gallons of finished spray per acre.

**Willowood Sulfentrazone MTZ DF** may be tank mixed with an herbicide labeled for burndown application such as Glyphosate, Paraquat, Dicamba, Rage D-Tech or other appropriate pre-plant or pre-emergence herbicides at the proper labeled rate, if weeds are present. 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.

For season-long control, a post-emergence application of atrazine, glyphosate, glufosinate, or other suitable herbicide following an application of **Willowood Sulfentrazone MTZ DF** is recommended. 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. Split or sequential pre-emergence applications of **Willowood Sulfentrazone MTZ DF** may be made to the same crop to provide season-long control of difficult to control existing or late emerging weeds.

#### **Pre-Plant Incorporated (PPI) Applications**

A pre-plant incorporated application of **Willowood Sulfentrazone MTZ DF** may be made the spring before planting in reduced and conventional tillage corn. **Willowood Sulfentrazone MTZ DF** should be shallowly incorporated or mixed thoroughly into the soil to a depth no greater than 2 inches using a field cultivator, field finisher or disk harrow that has been adjusted properly. If **Willowood Sulfentrazone MTZ DF** is incorporated deeper than 2 inches, inconsistent or poor weed control may result. Use the specified rate for the soil texture, organic matter, and pH level of the soil. **Willowood Sulfentrazone MTZ DF** can be tank mixed with other soil-applied herbicides and insecticides labeled for pre-plant incorporation in corn. 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.

#### **Aerial Applications**

Use nozzle types and arrangements that provide optimum coverage while producing a minimal amount of fine droplets. Make application in sufficient spray volume to achieve adequate coverage. Make application in a minimum of 5 gallons of finished spray per acre. Do not make application when wind speed favors drift beyond the area intended for treatment.

#### **Use Directions - Field Corn**

These use directions are crop-specific and are based upon the effects of **Willowood Sulfentrazone MTZ DF** (metribuzin and sulfentrazone) and primary soil and environmental factors, which may impact the product's activity on various weed species and affect tolerance among crops. The user is required to follow the instructions and guidance previously presented under Product Application Instructions, **Willowood Sulfentrazone MTZ DF** Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weeds Controlled and any other section of this label that pertains to the crop use.

#### **Use Precautions - Field Corn**

Not all varieties or cultivars of a given crop species have been tested with applications of **Willowood Sulfentrazone MTZ DF**. Consult your local University or Extension Weed Management specialists for additional information on specific varieties or cultivars and any other related information on **Willowood Sulfentrazone MTZ DF** under specific local conditions.

#### **Use Restrictions - Field Corn**

- Do not apply more than 0.375 lb./A/year sulfentrazone from all sources.
- Do not make application of more than 33.3 ounces by weight per acre (0.56 lb. a.i./A metribuzin and 0.37 lb. a.i./A sulfentrazone) of **Willowood Sulfentrazone MTZ DF** per 12-month period. The 12-month period is considered to begin upon the initial **Willowood Sulfentrazone MTZ DF** application.
- Do not make application to coarse soils classified as sand, which have less than 1% organic matter.
- Do not make application after crop emerges, or if the seedling is close to the soil surface.
- Do not make application to frozen soils or existing snow cover to prevent **Willowood Sulfentrazone MTZ DF** runoff from rain or snowmelt that may occur following application.
- Do not use low-pressure and high volume hand wand equipment to make applications of **Willowood Sulfentrazone MTZ DF**.



## POTATOES

<b>Pre-Emergence Applications</b>			
<b>Soil Texture</b>	<b>&lt;1.5% Organic Matter (Oz./Acre)</b>	<b>1.5 - 3.0% Organic Matter (Oz./Acre)</b>	<b>&gt;3.0% Organic Matter (Oz./Acre)</b>
<b>Coarse</b>	8.3 – 12.5  (0.14 – 0.21 lb. a.i./A metribuzin and 0.09 – 0.14 lb. a.i./A sulfentrazone)	8.3 – 12.5  (0.14 – 0.21 lb. a.i./A metribuzin and 0.09 – 0.14 lb. a.i./A sulfentrazone)	12.5 – 16.7  (0.21 – 0.28 lb. a.i./A metribuzin and 0.14 – 0.19 lb. a.i./A sulfentrazone)
<b>Medium</b>	8.3 – 12.5  (0.14 – 0.21 lb. a.i./A metribuzin and 0.09 – 0.14 lb. a.i./A sulfentrazone)	10.4 – 16.7  (0.18 – 0.28 lb. a.i./A metribuzin and 0.12 – 0.19 lb. a.i./A sulfentrazone)	14.6 – 18.8  (0.25 – 0.32 lb. a.i./A metribuzin and 0.16 – 0.21 lb. a.i./A sulfentrazone)
<b>Fine</b>	10.4 – 14.6  (0.18 – 0.25 lb. a.i./A metribuzin and 0.12 – 0.16 lb. a.i./A sulfentrazone)	12.5 – 16.7  (0.21 – 0.28 lb. a.i./A metribuzin and 0.14 – 0.19 lb. a.i./A sulfentrazone)	16.7 – 22.2  (0.28 – 0.37 lb. a.i./A metribuzin and 0.19 – 0.25 lb. a.i./A sulfentrazone)
<p>See <b>“Soil Types”</b> chart in the <b>PRODUCT INFORMATION</b> section of this label for information on soil texture.            Soils with pH &lt;7.0: Use higher rates.            Soil with pH &gt;7.0: Use lower rates.</p>			

### Ground and Aerial Applications

Make application of **Willowood Sulfentrazone MTZ DF** by air as a pre-emergence treatment following planting and after drag-off, but before potato emergence. Optimum product performance can be achieved if **Willowood Sulfentrazone MTZ DF** application is made to the soil surface and either rainfall or overhead irrigation is used to activate the product. If moisture is not received within 7 days after application in areas without irrigation, a shallow incorporation (no greater than 2 inches) may be needed before weed and potato emergence to activate the product. The use rate should be selected based on soil texture and organic matter. A burndown herbicide and adjuvants labeled for use in potatoes may be tank mixed with **Willowood Sulfentrazone MTZ DF** for control of emerged weeds at the time of the application. Do not make application of **Willowood Sulfentrazone MTZ DF** if the potatoes have emerged from the soil as adverse crop response may result. **Willowood Sulfentrazone MTZ DF** may be tank mixed with other herbicides labeled for use in potatoes by soil application to improve weed management and increase weed control spectrum. Make application of **Willowood Sulfentrazone MTZ DF** in a minimum of 10 gallons of spray by ground application and minimum of 5 gallons of spray by air.

### Chemigation Applications

Application of **Willowood Sulfentrazone MTZ DF** may be made to potatoes through sprinkler irrigation systems including center pivot, lateral move, end tow, solid set or hand move irrigation systems. Make application of **Willowood Sulfentrazone MTZ DF** before potato emergence using sufficient water (0.25 to 0.5 inch per acre) to provide thorough soil surface coverage, but to avoid runoff of irrigation water. Application of **Willowood Sulfentrazone MTZ DF** may be made with other products labeled for chemigation use in potatoes.

**Note:** Irrigating with water that is highly alkaline (pH higher than 7.5) following a **Willowood Sulfentrazone MTZ DF** soil application may increase the amount of sulfentrazone available in soil solution and can result in adverse crop response or injury. This response depends on the initial **Willowood Sulfentrazone MTZ DF** application rate, application timing, amount and pH of irrigation water, the sensitivity of the crop and the crop growth stage when irrigated. The risk of adverse crop response is reduced as the crop growth stage progresses.

### Weeds Controlled - Willowood Sulfentrazone MTZ DF will provide control of the following weeds in Potatoes when applied according to directions:

Amaranth, Palmer  
 Filaree, redstem  
 Kochia (ALS and Triazine Resistant)  
 Lambsquarters, common  
 Morningglory (ivyleaf & tall)  
 Nightshade, Eastern black  
 Pigweed (redroot & smooth)  
 Thistle, Russian  
 Waterhemp (common & tall)

Refer to **LIST OF WEEDS CONTROLLED** section in this label for information on other weeds not listed above.

### Use Directions - Potatoes

Potato varieties may vary in their sensitivity or tolerance to herbicide applications. When making an application of **Willowood Sulfentrazone MTZ DF** on an untested variety, always determine the crop tolerance prior to planting or spraying with this product. Some potato varieties, including Sangre, Shepody and Snowden, have shown sensitivity to application of **Willowood Sulfentrazone MTZ DF**. Caution should be used if planting these varieties on marginal coarse soils.

These use directions are crop-specific and are based upon the effects of **Willowood Sulfentrazone MTZ DF** (metribuzin and sulfentrazone) and primary soil and environmental factors, which may impact the product's activity on various weed species and affect tolerance among crops. The user is required to follow the instructions and guidance previously presented under Product Application Instructions, **Willowood Sulfentrazone MTZ DF** Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weeds Controlled and any other section of this label that pertains to the crop use.

### Use Precautions - Potatoes

Not all varieties or cultivars of a given crop species have been tested with applications of **Willowood Sulfentrazone MTZ DF**. Consult your local University or Extension Weed Management specialists for additional information on specific varieties or cultivars and any other related information on **Willowood Sulfentrazone MTZ DF** under specific local conditions.

### Use Restrictions - Potatoes

- Do not apply more than 0.25 lb./A/year sulfentrazone from all sources.
- Use of low pressure and high volume wand equipment is prohibited.
- Do not use on sandy soils which have less than 1% organic matter.
- Do not make application of **Willowood Sulfentrazone MTZ DF** after potato emergence from the soil as undesirable crop response may occur.
- Do not make application of more than 22.2 ounces by weight per acre (0.37 lb. a.i./A metribuzin and 0.25 lb. a.i./A sulfentrazone) per 12-month period. The 12-month period is considered to begin upon the initial **Willowood Sulfentrazone MTZ DF** application.

### SOYBEANS (Except in CA)

**Willowood Sulfentrazone MTZ DF** may be applied as a pre-emergence or pre-plant incorporated treatment for the control of weeds in soybeans as described below.

#### Ground Applications

Use ground spray equipment with a boom that has the appropriate nozzles, spray tips and screens and that is adjusted to provide optimum spray distribution and coverage at the appropriate operating pressures. Use nozzles that produce minimal amounts of fine spray droplets to avoid spray drift or inadequate foliar and/or soil coverage. Make application in a minimum of 10 gallons of finished spray per acre by ground. Take note that overlaps and slower ground speeds while starting, stopping or turning while spraying may result in excessive application and subsequent adverse crop response.

Do not make application when wind speed favors drift beyond the area intended for treatment.

#### Aerial Applications

Use nozzle types and arrangements that provide optimum coverage while producing a minimal amount of fine droplets. Make application in sufficient spray volume to achieve adequate coverage. Make application in a minimum of 5 gallons of finished spray per acre. Do not make application when wind speed favors drift beyond the area intended for treatment.

#### Fall Applications

Application of **Willowood Sulfentrazone MTZ DF** may be made in no-till and conservation tillage production systems as a fall treatment to the stubble of harvested crops for burndown of existing vegetation and pre-emergence control of labeled weeds the following spring. Applications of **Willowood Sulfentrazone MTZ DF** can be made to the stubble of a harvested crop in no-till or to the soil surface of conservation tillage fields after harvest when the soil temperature at a depth of 4 inches is sustained at 55°F and falling. Make application after September 30<sup>th</sup> in those areas North of Interstate 90 and after October 15<sup>th</sup> in those areas North of Interstate 40. In order to obtain adequate weed control in all areas, soils must have sustained temperature of 55°F or lower. Treatments to ridge till production systems must be made after the formation of ridges or beds.

For emerged weeds at the time of application, use a burndown herbicide in the tank mixture at labeled rates for the target weeds. Applications made in the fall as burndown treatments should be made in a minimum of 15 gallons per acre for adequate coverage of the weeds being treated. Spray volume should be increased where weed density is high or heavy crop residue levels are present. The addition of adjuvants such as crop oil concentrate (COC) or methylated seed oil (MSO) to the spray mixture can be used to enhance the burndown activity of the application when making burndown applications to emerged weeds. If weeds are present at time of **Willowood Sulfentrazone MTZ DF** treatment, tank mix with an appropriate burndown herbicide(s)

for improved control of existing weeds. 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. For **Willowood Sulfentrazone MTZ DF** application rates, refer to the **Soybean Standard Rate** table for standard rate programs and **Soybean Reduced Rate** table for reduced rate programs in glyphosate- and glufosinate-tolerant soybean systems.

#### **Spring Applications - Early Pre-Plant**

Application of **Willowood Sulfentrazone MTZ DF** may be made up to 30-45 days before planting (early pre-plant) in no-till or minimum till cropping systems. For applications earlier than 30 days before planting, the high rate in the rate range may be needed for extended residual control. **Willowood Sulfentrazone MTZ DF** has limited burndown control of small weeds. Application of **Willowood Sulfentrazone MTZ DF** made early pre-plant must be applied in combination with an appropriate burndown herbicide such as glyphosate, glufosinate, gramoxone, and/or 2,4-D to achieve acceptable control of existing weeds present during application. The addition of crop oil concentrate at 1 quart per acre or non-ionic surfactant at 0.25% will increase burndown effectiveness of **Willowood Sulfentrazone MTZ DF**. For **Willowood Sulfentrazone MTZ DF** application rates, refer to the **Soybean Standard Rate** table for standard rate programs and **Soybean Reduced Rate** table for reduced rate programs in glyphosate- and glufosinate-tolerant soybean systems.

#### **Pre-Plant Incorporated (PPI)**

Application of **Willowood Sulfentrazone MTZ DF** may be made pre-plant incorporated before planting soybeans. Application of **Willowood Sulfentrazone MTZ DF** may be made alone or in combination with other pre-plant incorporated herbicides labeled for soybeans. Do not incorporate product deeper than 2 inches. Improper soil incorporation may result in erratic or poor weed control and/or crop injury. Application of **Willowood Sulfentrazone MTZ DF** may be followed by labeled post-emergence soybean herbicides for increased control of grass and broadleaf weeds. 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. For **Willowood Sulfentrazone MTZ DF** application rates, refer to the **Soybean Standard Rate** table for standard rate programs and **Soybean Reduced Rate** table for reduced rate programs in glyphosate- and glufosinate-tolerant soybean systems.

#### **Pre-Emergence Applications**

Application of **Willowood Sulfentrazone MTZ DF** can be made from 30 days before planting and up to 3 days after planting, but before the crop seeds germinate to prevent injury to emerging crop seedlings. Application of **Willowood Sulfentrazone MTZ DF** made after crop emergence will cause severe crop injury. Refer to **APPLICATION INSTRUCTIONS - Soybean Tolerance** for more information regarding soybean tolerance. Application of **Willowood Sulfentrazone MTZ DF** can be made alone or in combination with other labeled soybean herbicides for pre-emergence grass control. Application of **Willowood Sulfentrazone MTZ DF** can be made pre-emergence following the use of a pre-plant incorporated grass herbicide labeled for use on soybeans. If weeds are present at time of **Willowood Sulfentrazone MTZ DF** application, appropriate burndown herbicides should be tank mixed for improved control of existing weeds. 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. It is required that seed furrows be completely closed before **Willowood Sulfentrazone MTZ DF** application to avoid crop injury. For **Willowood Sulfentrazone MTZ DF** application rates, refer to the **Soybean Standard Rate** table for standard rate programs and **Soybean Reduced Rate** table for reduced rate programs in glyphosate- and glufosinate-tolerant soybean systems.

**Willowood Sulfentrazone MTZ DF** may be tank mixed with other products containing metribuzin. Do not exceed the maximum annual amount of metribuzin.

### Soybeans - Standard Rate Programs

Fall, Early Pre-plant, Pre-Plant, Pre-Plant Incorporated, Pre-Emergence Conservation or Conventional Tillage*		
Soil Texture**	1.0 - 2.0% Organic Matter (Oz./Acre)	2.0 - 4.0% Organic Matter (Oz./Acre)
Coarse	12.0 – 14.0 (0.20 – 0.24 lb. a.i./A metribuzin and 0.14 – 0.16 lb. a.i./A sulfentrazone)	14.0 – 16.0 (0.24 – 0.27 lb. a.i./A metribuzin and 0.16 – 0.18 lb. a.i./A sulfentrazone)
	14.0 – 16.0 (0.24 – 0.27 lb. a.i./A metribuzin and 0.16 – 0.18 lb. a.i./A sulfentrazone)	16.0 – 18.0 (0.27 – 0.30 lb. a.i./A metribuzin and 0.18 – 0.20 lb. a.i./A sulfentrazone)
Medium	16.0 – 18.0 (0.27 – 0.30 lb. a.i./A metribuzin and 0.18 – 0.20 lb. a.i./A sulfentrazone)	18.0 – 20.0 (0.30 – 0.34 lb. a.i./A metribuzin and 0.20 – 0.23 lb. a.i./A sulfentrazone)
Fine		

\*Use the higher rate for suppression of grasses and sedges.  
 \*\*Do not use this product on sandy soil types that have <1% organic matter.

See “Soil Types” chart in the **PRODUCT INFORMATION** section of this label for information on soil texture.

**Adverse crop response may result if applications are made on soils with pH greater than 7.5. To reduce adverse crop response, use a maximum of 12 oz. of Willowood Sulfentrazone MTZ DF on soils with pH greater than 7.5.**

### Soybeans - Reduced Rate Programs

Fall, Early Pre-plant, Pre-Plant, Pre-Plant Incorporated, Pre-Emergence Conservation or Conventional Tillage* <i>(Reduced Rates for Suppression of Listed Weeds to Reduce Early Season Weed Competition in Glyphosate- and Glufosinate-Tolerant Soybean Systems)</i>		
Soil Texture**	1.0 - 2.0% Organic Matter (Oz./Acre)	2.0 - 4.0% Organic Matter (Oz./Acre)
Coarse	8.0 (0.14 lb. a.i./A metribuzin and 0.09 lb. a.i./A sulfentrazone)	8.0 – 10.0 (0.14 – 0.17 lb. a.i./A metribuzin and 0.09 – 0.11 lb. a.i./A sulfentrazone)
	8.0 – 10.0 (0.14 – 0.17 lb. a.i./A metribuzin and 0.09 – 0.11 lb. a.i./A sulfentrazone)	10.0 – 12.0 (0.17 – 0.20 lb. a.i./A metribuzin and 0.11 – 0.14 lb. a.i./A sulfentrazone)
Medium	10.0 – 12.0 (0.17 – 0.20 lb. a.i./A metribuzin and 0.11 – 0.14 lb. a.i./A sulfentrazone)	
Fine		

\*For fall applications, use the higher rate for the appropriate soil texture and organic matter. Use the higher rate for suppression of grasses and sedges.  
 \*\*Do not use this product on sandy soil types that have <1% organic matter.

See “Soil Types” chart in the **PRODUCT INFORMATION** section of this label for information on soil texture.

**Adverse crop response may result if applications are made on soils with pH greater than 7.5. To reduce adverse crop response, use the minimum rate for the appropriate % organic matter and soil texture on soils with pH greater than 7.5.**



## Reduced Rate

### **Willowood Sulfentrazone MTZ DF Reduce Rate Programs Followed by Post-Emergence Herbicide Treatments** (refer to the **Soybean Reduced Rate Program** table)

Application of **Willowood Sulfentrazone MTZ DF** may be made as an early pre-plant, pre-plant incorporated or pre-emergence treatment followed by labeled post-emergence soybean herbicides for increased control of grass and broadleaf weeds. Application of **Willowood Sulfentrazone MTZ DF** may also be followed by a post-emergence application of a glyphosate product to glyphosate-tolerant soybeans. Make application at the specified use rate for **Willowood Sulfentrazone MTZ DF** for the suppression of weeds in glyphosate-tolerant soybeans, maintaining control with sequential applications of post-emergence herbicides labeled for use. Refer to the partner product labels for use directions, weeds controlled, precautionary statements, restrictions and other information.

## Replanting Instructions

If the initial planting of soybeans fails to produce a stand, only soybeans may be replanted in fields treated with **Willowood Sulfentrazone MTZ DF** used according to directions in **Soybean** section of this label. Unless specifically allowed in other sections of this label, do not retreat field with a second application of **Willowood Sulfentrazone MTZ DF** or adverse crop response or injury may result. Do not replant treated fields with any crop at intervals that are inconsistent with the **Rotational Crop Guidelines** found on this label. 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.

## Use Restrictions - Soybeans

- Do not apply more than 0.375 lb./A/year sulfentrazone from all sources.
- Do not make application of more than 20 ounces by weight per acre (0.34 lb. a.i./A metribuzin and 0.23 lb. a.i./A sulfentrazone) of **Willowood Sulfentrazone MTZ DF** per 12-month season. The 12-month period is considered to begin upon the initial **Willowood Sulfentrazone MTZ DF** application.
- Do not make application of **Willowood Sulfentrazone MTZ DF** after soybeans have emerged.
- Do not make application to sandy soils which have less than 1% organic matter.
- Do not make application of **Willowood Sulfentrazone MTZ DF** to frozen soil.
- Do not incorporate at depth greater than 2 inches.
- Do not graze treated soybean or harvest for forage or hay.

## SUGARCANE

Application of **Willowood Sulfentrazone MTZ DF** may be made to sugarcane as a pre-emergence treatment at-planting or lay-by timing.

## Willowood Sulfentrazone MTZ DF Use Rates

Planting Time and Lay-by Applications		
Soil Texture*	1.0 - 2.0% Organic Matter (Oz./Acre)	2.0 - 4.0% Organic Matter (Oz./Acre)
Coarse	16.0 – 20.0 (0.27 – 0.34 lb. a.i./A metribuzin and 0.18 – 0.23 lb. a.i./A sulfentrazone)	20.0 – 26.0 (0.34 – 0.44 lb. a.i./A metribuzin and 0.23 – 0.29 lb. a.i./A sulfentrazone)
	20.0 – 26.0 (0.34 – 0.44 lb. a.i./A metribuzin and 0.23 – 0.29 lb. a.i./A sulfentrazone)	26.0 – 30.0 (0.44 – 0.51 lb. a.i./A metribuzin and 0.29 – 0.34 lb. a.i./A sulfentrazone)
Medium	26.0 – 30.0 (0.44 – 0.51 lb. a.i./A metribuzin and 0.29 – 0.34 lb. a.i./A sulfentrazone)	30.0 – 33.0 (0.51 – 0.56 lb. a.i./A metribuzin and 0.34 – 0.37 lb. a.i./A sulfentrazone)

\*Use the higher rates for soils with pH less than 7.0. Use the lower rates within the rate range for pH greater than 7.0.

See “**Soil Types**” chart in the **PRODUCT INFORMATION** section of this label for information on soil texture.  
Soils with pH <7.0: Use higher rates.  
Soil with pH >7.0: Use lower rates.



### Planting Time Application

Application of **Willowood Sulfentrazone MTZ DF** can be made to newly planted or ratoon sugarcane as a broadcast or banded pre-emergent soil applied treatment for the control of broadleaf weeds, grasses and sedges in sugarcane. Use the higher use rate on clay soils and/or soils with organic matter content that is higher than 2 percent. Make application either by air in a minimum of 5 gallons of spray per acre or by ground equipment in a minimum of 10 gallons of spray volume per acre. Application of **Willowood Sulfentrazone MTZ DF** may be made with other herbicides registered for use in sugarcane.

For application made by air, apply **Willowood Sulfentrazone MTZ DF** at a minimum distance of 400 feet upwind from sensitive plants to assure that spray does not adversely affect adjacent sensitive non-target crops.

### Use Restrictions - Sugarcane

- Do not apply more than 0.375 lb./A/year sulfentrazone from all sources.
- Pre-Harvest Interval: 120 days
- Do not make application of more than 33 ounces per acre (0.56 lb. a.i./A metribuzin and 0.37 lb. a.i./A sulfentrazone) of **Willowood Sulfentrazone MTZ DF** per 12-month season. The 12-month period is considered to begin upon the initial **Willowood Sulfentrazone MTZ DF** application.
- Do not graze treated sugarcane or harvest for forage or hay.
- Use of low-pressure and high volume hand wand equipment is prohibited.

### TOMATOES (Transplanted Only)

#### Use Rate Tomato (Transplant only)

Pre-Plant Incorporated (PPI) Applications			
Soil Texture*	<1.5% Organic Matter (Oz./Acre)	1.5 - 3.0% Organic Matter (Oz./Acre)	>3.0% Organic Matter (Oz./Acre)
Coarse	6.0 – 8.0 (0.10 – 0.14 lb. a.i./A metribuzin and 0.07 – 0.09 lb. a.i./A sulfentrazone)	8.0 – 16.0 (0.14 – 0.27 lb. a.i./A metribuzin and 0.09 – 0.18 lb. a.i./A sulfentrazone)	16.0 – 20.0 (0.27 – 0.34 lb. a.i./A metribuzin and 0.18 – 0.23 lb. a.i./A sulfentrazone)
	8.0 – 12.0 (0.14 – 0.20 lb. a.i./A metribuzin and 0.09 – 0.14 lb. a.i./A sulfentrazone)	16.0 (0.27 lb. a.i./A metribuzin and 0.18 lb. a.i./A sulfentrazone)	20.0 (0.34 lb. a.i./A metribuzin and 0.23 lb. a.i./A sulfentrazone)
Fine	8.0 – 16.0 (0.14 – 0.27 lb. a.i./A metribuzin and 0.09 – 0.18 lb. a.i./A sulfentrazone)	16.0 – 20.0 (0.27 – 0.34 lb. a.i./A metribuzin and 0.18 – 0.23 lb. a.i./A sulfentrazone)	20.0 (0.34 lb. a.i./A metribuzin and 0.23 lb. a.i./A sulfentrazone)

\*Do not use this product on sandy soil types that have <1% organic matter.

See “Soil Types” chart in the **PRODUCT INFORMATION** section of this label for information on soil texture.

Soils with pH <7.0: Use higher rates.

Soil with pH >7.0: Use lower rates.

### Pre-Plant Incorporated (PPI) Applications

Application of **Willowood Sulfentrazone MTZ DF** may be made pre-plant incorporated at 1” - 2” depth as a broadcast application. Applications must be made before transplanting.

### Weeds Controlled - Willowood Sulfentrazone MTZ DF will provide control of the following weeds in Tomatoes when applied according to directions:

- Galinsoga
- Lambsquarters, common
- Morningglory, ivyleaf
- Nightshade, Eastern black
- Nutsedge, yellow
- Pigweed, redroot
- Waterhemp (common & tall)

### Use Directions - Tomatoes

These use directions are crop-specific and are based upon the effects of **Willowood Sulfentrazone MTZ DF** (metribuzin and sulfentrazone) and primary soil and environmental factors, which may impact the product's activity on various weed species and affect tolerance among crops. The user is required to follow the instructions and guidance previously presented under Product Application Instructions, **Willowood Sulfentrazone MTZ DF** Product Use Rates, Rotational Crop Guidelines, Replanting Instructions, Weeds Controlled and any other section of this label that pertains to the crop use.

### Use Precautions - Tomatoes

Not all varieties or cultivars of a given crop species have been tested with applications of **Willowood Sulfentrazone MTZ DF**. Consult your local University or Extension Weed Management specialists for additional information on specific varieties or cultivars and any other related information on **Willowood Sulfentrazone MTZ DF** under specific local conditions.

### Use Restrictions - Tomatoes

- Do not make application of more than 20 ounces (0.34 lb. a.i./A metribuzin and 0.23 lb. a.i./A sulfentrazone) of **Willowood Sulfentrazone MTZ DF** per acre per 12-month period. The 12-month period is considered to begin upon the initial **Willowood Sulfentrazone MTZ DF** application.
- Do not make application of more than 0.375 lb. a.i. of sulfentrazone or 1.0 lb. a.i. of metribuzin per year.
- Do not make application by air.
- Do not make post-emergence applications of other herbicides that contain metribuzin to transplanted tomatoes within 14 days of application of **Willowood Sulfentrazone MTZ DF**.

## INDUSTRIAL VEGETATION MANAGEMENT RIGHTS-OF-WAY

### Railroad

**Willowood Sulfentrazone MTZ DF** may be used for vegetation management to control weeds and maintain bare ground on railroad rights-of-way, railroad yards, railroad crossings, and railroad bridge abutments.

### Highway, Roadside, Pipeline and Utilities

**Willowood Sulfentrazone MTZ DF** may be used to control weeds and maintain bare ground on highway, roadside, pipeline and utilities rights-of-way. These areas include, but are not limited to: guard rails; road shoulders, electric utility substations, pipeline pumping stations, areas around electric transmission towers, areas around distribution line poles and in other areas where complete vegetation control is needed.

### Fence Rows, Industrial Areas and other Non-Crop Sites

**Willowood Sulfentrazone MTZ DF** may be used to control weeds and maintain bare ground along fence rows, in industrial areas including production facilities, tank farms, storage areas, parking areas, lumber yards, airports, military installations, and in similar non-crop sites where complete vegetation control is needed.

### Application Information

**Willowood Sulfentrazone MTZ DF** may be used for residual control of germinating weeds in non-crop areas as a broadcast application of 9.5 to 14.4 ounces (0.16 – 0.24 lb. a.i./A metribuzin and 0.11 – 0.16 lb. a.i./A sulfentrazone) per acre in a minimum of 10 gallons of spray solution. Applications by helicopter are permitted on railroad rights-of-way only.

Do not make applications of **Willowood Sulfentrazone MTZ DF** to sandy soils with less than 1% organic matter.

A burndown herbicide such as glyphosate, glyphosate-trimesium, diquat, 2,4-D, or dicamba may be used in tank mixture with **Willowood Sulfentrazone MTZ DF**. 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.

### Application Timing

For optimum product performance, make application of **Willowood Sulfentrazone MTZ DF** alone or in tank mix with other herbicides for residual control of weeds in later summer, fall or early spring to allow for sufficient moisture to activate product in the soil.

**Weeds Controlled - IVM**

When applied at 10 – 30 oz. per acre (0.17 – 0.51 lb. a.i./A metribuzin and 0.11 – 0.34 lb. a.i./A sulfentrazone), **Willowood Sulfentrazone MTZ DF** will control the following weeds in non-crop areas. To extend the length of control, use the higher labeled use rate. For soils that are fine texture and for soils that have greater than 2% organic matter, use the higher use rate.

Beggarweed, Florida	<i>Desmodium tortuosum</i>
Carpetweed	<i>Mollugo verticillata</i>
Chickweed, common	<i>Stellaria media</i>
Copperleaf, Hophornbeam	<i>Acalypha ostryifolia</i>
Crabgrass species	<i>Digitaria</i> spp.
Croton, tropic	<i>Croton glandulosus</i>
Daisy, American	<i>Coreopsis grandiflora</i>
Dayflower, Virginia	<i>Commelina virginica</i>
Dock, curly	<i>Rumex crispus</i>
Fixweed	<i>Descurainia Sophia</i>
Galinsoga, hairy	<i>Galinsoga ciliate</i>
Groundcherry, clammy (seedling)	<i>Physalis heterophylla</i>
Groundcherry, cutleaf	<i>Physalis angulate</i>
Jimsonweed	<i>Datura stramonium</i>
Kochia	<i>Kochia scoparia</i>
ALS/Triazene Resistant Kochia	<i>Kochia scoparia</i>
Lambsquarters, common	<i>Chenopodium album</i>
Lettuce, wild	<i>Lactuca virosa</i>
Mallow, common	<i>Malva neglecta</i>
Milkweed, honeyvine	<i>Ampelamus albidus</i>
Mexicanweed	<i>Caperonia castaneifolia</i>
Morningglory species	<i>Ipomoea</i> spp.
Mustard species	<i>Brassica</i> spp.
Nightshade species	<i>Solanum</i> spp.
Nutsedge species	<i>Cyperus</i> spp.
Palmer amaranth	<i>Amaranthus palmeri</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Texasweed	<i>Caperonia palustris</i>
Thistle, Russian	<i>Salsola iberica</i>
Waterhemp, tall	<i>Amaranthus tuberculatus</i>
Waterhemp, common	<i>Amaranthus rudis</i>

## TURF - Use Directions

**Willowood Sulfentrazone MTZ DF** is a dry flowable formulation that contains 0.45 lb. active ingredient per pound (0.27 lb. a.i. metribuzin and 0.18 lb. a.i.) and works by uptake of the product through the weed roots and shoots. **Willowood Sulfentrazone MTZ DF** may be used in turf as a selective herbicide to control annual grass weeds and broadleaf weeds in established turf areas, including but not limited to: residential and institutional lawns, athletic fields, golf course roughs, and fairways.

### Application Information

Do not mix or load this product within 50 feet of wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This restriction does not apply to plugged abandoned wells or wells that are properly capped and does not apply to impervious pads or mixing/loading areas that are properly diked.

Mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well is strictly prohibited unless on an impervious pad constructed to withstand the weight of the heaviest load that could be on or moved across the pad. The pad must be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rainwater that may fall on the pad. Surface water must not be allowed to flow over or from the pad. To facilitate material removal, the pad must be sloped. A pad that is not under cover must have capacity to hold a minimum of 110% of the capacity of the largest pesticide product container or application equipment that will be on the pad. Covered pads that are completely protected from precipitation must have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment that will be on the pad. The containment capacities must be specified and maintained at all times. Minimum specific containment capacities do not apply to vehicles that deliver pesticides to the mixing/loading site. There may be additional State requirements regarding containment and well setback restrictions. Consult local authorities for additional information.

This product must be used in a manner that will prevent back-siphoning into wells and prevent spills. Dispose of excess pesticide, spray mixtures or rinsates properly.

### MIXING & LOADING INSTRUCTIONS – Non-Crop Areas

Clean spray equipment and remove any remaining pesticide deposits before making applications with **Willowood Sulfentrazone MTZ DF**. Follow the spray tank cleanout procedures specified on the label of product previously applied before adding **Willowood Sulfentrazone MTZ DF** to the spray tank.

#### Willowood Sulfentrazone MTZ DF Applied Alone

- Select the application rate from the appropriate section.
- Fill the spray tank with  $\frac{1}{4}$  the volume of water required for the treatment area.
- While agitating, open the container and add the specified amount of **Willowood Sulfentrazone MTZ DF** for area being treated, measuring directly into the spray tank.
- Allow product to fully disperse, then add the remaining spray water.
- Maintain agitation during filling, mixing and application.
- Apply the **Willowood Sulfentrazone MTZ DF** spray mixture immediately after mixing.

#### Surfactants or Adjuvants

**The use of surfactants is NOT recommended. The use of surfactants or adjuvants with Willowood Sulfentrazone MTZ DF may cause temporary discoloration of some turf types. High temperatures or high relative humidity may increase this risk.**

#### Tank Mix Combinations with Willowood Sulfentrazone MTZ DF

- Select the application rate for **Willowood Sulfentrazone MTZ DF** from the appropriate crop section.
- 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.
- Conduct a jar test to ensure compatibility before mixing large volumes.

#### Tank Mix Compatibility

**Willowood Sulfentrazone MTZ DF** is compatible with most fungicides, herbicides, insecticides, growth regulators, liquid fertilizers and spray adjuvants that are commonly used in turf management. When preparing a new tank mixture combination, conduct a compatibility test by mixing the appropriate amount of all tank mix ingredients in a jar before mixing in the spray tank. Shake the mixture in the jar vigorously and then allow to stand for 5 to 10 minutes. If the mixture fails to re-suspend when shaken or exhibits rapid precipitation, this indicates poor compatibility and the ingredients should not be applied together in tank mixture.

If a jar test indicates the mixture is compatible, prepare the tank mixture as follows:

- Fill the spray tank with approximately  $\frac{1}{4}$  the volume of water required for the treatment area.
- While agitating, open the bottle and add the specified amount of **Willowood Sulfentrazone MTZ DF** for area being treated, measuring directly into the spray tank.
- Allow product to fully disperse.

- Add the specified amount(s) of additional tank mix product(s) in the following order, allowing complete mixing and dispersing after each addition:
  - o dry formulations (e.g., wettable powders, dry flowables)
  - o liquid suspensions (e.g., flowables)
  - o liquids (e.g., EC's), followed by remaining water soluble products, adjuvants and/or carrier
- Add water as necessary.
- Maintain agitation during filling, mixing and application.
- Apply **Willowood Sulfentrazone MTZ DF** spray mixture immediately after mixing.
- Do not store the spray tank overnight or for any extended period for time with **Willowood Sulfentrazone MTZ DF** spray mixture remaining in the tank.

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. Tank mixture recommendations are only for use in states where the tank mixture product and application site are registered. Certain states or geographical regions may have established dose rate limitations. Consult your State Pesticide Control Agency for additional information regarding the maximum use rates.

### **Application Equipment - Ground**

Power sprayers – for uniform and accurate coverage of spray, properly calibrate equipment prior to spray and make application following labeled use directions. The use of marker dyes and foams can improve accuracy in application. For broadcast applications, boom sprayers that are equipped with flat fan nozzles, tips and screens are ideal. Powers sprayers that are fitted with spray wand/gun may be used for broadcast application. The equipment should be properly calibrated and care should be used in application. Power sprayers with spray wand/gun may be used for spot treatments.

Hand-operated sprayers – backpack and compression sprayers may be used for small turfgrass areas and spot treatments. Wands that are fitted with flat fan nozzle tips should be held stationary and at the proper height during application. Side-to-side motion may result in uneven coverage.

Make application of this product in a sufficient spray volume of carrier solution that provides uniform spray distribution – typically 20 to 175 gallons per acre (0.5 to 4.0 gals./1,000 ft.<sup>2</sup>) and spray pressure adjusted to 20 to 40 psi.

### **SPRAY EQUIPMENT CLEAN-OUT – Non-Crop Areas**

**As soon as possible after applying Willowood Sulfentrazone MTZ DF and before using sprayer equipment for any other applications, thoroughly clean sprayer equipment following the procedure below:**

1. Thoroughly drain spray tank, hoses, and spray boom.
2. Rinse the inside of the spray tank with clean water to remove sediment and residues.
3. Flush sprayer hoses, boom and nozzles with clean water.
4. Fill the tank ½ full with clean water, and add tank mix cleaner or ammonia (follow manufacturer's directions for use). Fill the tank to capacity and operate the sprayer for 15 minutes to flush hoses, boom, and nozzles.
5. To ensure thorough cleaning of the spray tank, leave the cleaning solution in the tank, hoses, spray booms and spray nozzles overnight or during storage.
6. Before using the sprayer, drain the spray equipment. Rinse the tank with clean water and flush through the hoses, boom, and nozzles. Clean spray tips and screens separately with the tank mix cleaner or ammonia solution.
7. Dispose of all cleaning solution and rinsate in accordance with Federal, State and local regulations and guidelines.

Do not drain or flush spray equipment or rinsate on or near desirable trees or plants.

Do not contaminate any body of water, including irrigation water that may be used on other crops.

If the sprayer has been stored or left idle, purge the spray boom and nozzles with clean water before starting any application.

If equipment is not cleaned properly, residue of **Willowood Sulfentrazone MTZ DF** can remain in spray equipment, and may be released during subsequent applications, potentially causing adverse crop response to certain crops and other vegetation. Willowood, LLC accepts no liability for any effects due to equipment that is not cleaned properly.



## WEED CONTROL IN TURFGRASS

### Use Directions - Turf

**Willowood Sulfentrazone MTZ DF** may be used on bermudagrass, centipedegrass, and zoysiagrass that are well established. It is important to note that turfgrass injury may result from application of this product on stands of grass that have not been well established or are otherwise under some form of stress (caused by weather, disease, chemical, mechanical or other factors).

### Use Precautions - Turf

- Temporary discoloration of turfgrass has been observed when Primo is used in tank mixture or application is made within 7 days of **Willowood Sulfentrazone MTZ DF**. Application of Primo should be made 7 days before or 7 days after application of **Willowood Sulfentrazone MTZ DF** to reduce the risk of discoloration.

### Use Restrictions - Turf

- Do not make application to golf course putting greens or tees or turf areas of closely mowed turf.
- Do not make application to turfgrasses that are not listed on this label.
- Do not make application under conditions which would allow spray to drift on to desirable plants in adjacent areas.
- Do not make application with surfactants, unless there is previous experience and demonstrated compatibility, safety and tolerance with the chosen combination.
- Do not graze or feed livestock forage that is cut from treated areas.
- Do not make application directly to or within root zones of trees, landscape ornamental plants or ornamental beds.

Applied as directed and under the timing and conditions described, established turfgrasses are tolerant to **Willowood Sulfentrazone MTZ DF** at the use rate range of 6 to 30 oz./acre (0.10 – 0.51 lb. a.i./A metribuzin and 0.07 – 0.34 lb. a.i./A sulfentrazone) or 0.138 to 0.689 oz./1,000 ft.<sup>2</sup>.

### Use Rate in Tolerant Grasses

Grass Type*	Single Application		
	Lb. A.i./Acre	Oz./1,000 ft. <sup>2</sup>	Oz./Acre
Warm season grasses			
Bermudagrass ( <i>Cynodon dactylon</i> ) and hybrids Centipedegrass ( <i>Eremochloa ophiuroides</i> )** Zoysiagrass ( <i>Zoysia japonica</i> )**	0.10 – 0.51 lb. a.i./A metribuzin and 0.07 – 0.34 lb. a.i./A sulfentrazone	0.138 – 0.689	6 – 30

\***Willowood Sulfentrazone MTZ DF** has shown tolerance for the turfgrasses listed; however, it is impossible to test all varieties and cultivars, therefore it is recommended that for newly released cultivars or varieties a small area is tested prior to treatment of the larger area to be treated.

\*\*Applications made with **Willowood Sulfentrazone MTZ DF** may cause temporary discoloration to exposed leaf surfaces on certain cultivars or varieties of centipede or zoysiagrass. The treated turfgrass will start new growth and recover. Leaf tissue that is discolored will be removed by mowing. To decrease the potential for discoloration, do not make application of **Willowood Sulfentrazone MTZ DF** on turfgrass that is under conditions of stress (caused by weather, disease, chemical, mechanical means or other related factors). Implement proper cultural practices such as proper mowing height, sufficient moisture, and fertility to promote healthy turfgrass growth.

## POST-EMERGENCE CONTROL

### Broadleaf Weeds: Annual, Biennial, and Perennial

Application of **Sulfentrazone MTZ DF** will provide control or suppression of the weeds listed below when application is made to newly emerged weeds. Make application at 6 to 30 oz./acre (0.10 – 0.51 lb. a.i./A metribuzin and 0.07 – 0.34 lb. a.i./A sulfentrazone or 0.138 to 0.689 oz./1,000 ft.<sup>2</sup>). Do not exceed the maximum use rate.

**Sulfentrazone MTZ DF** may be tank mixed with other herbicide products labeled for post-emergence use to broaden weed spectrum and increase performance on certain weed species. The control of emerged annual grass weeds may be increased by mixing **Sulfentrazone MTZ DF** with MSMA or Drive®. 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. Follow all label restrictions, use directions, precautions and restrictions before using this product in tank mixture. Read and follow the **Tank Mixture Compatibility** section of this label for additional information.

### Weeds Controlled or Suppressed – Turf

Bedstraw, catchweed	<i>Galium aparine</i>
Beggarweed, Florida	<i>Desmodium tortuosum</i>
Bittercress	<i>Cardamine</i> spp.
Black medic	<i>Medicago lupulina</i>
Buttercups	<i>Ranunculus</i> spp.
Carolina geranium	<i>Geranium carolinianum</i>
Carpetweed	<i>Mollugo verticillata</i>
Chickweed, common	<i>Stellaria media</i>
Chickweed, mouse ear	<i>Cerastium vulgatum</i>
Cinquefoil	<i>Potentilla</i> spp.
Clover	<i>Trifolium</i> spp.
Copperleaf	<i>Acalypha</i> spp.
Cudweed	<i>Gnaphalium</i> spp.
Dandelion	<i>Taraxacum officinale</i>
Dock, curly	<i>Rumex crispus</i>
Dollarweed	<i>Hydrocotyle umbellata</i>
Eclipta	<i>Eclipta prostrate</i>
Evening primrose	<i>Oenothera biennis</i>
Fiddleneck	<i>Amsinckia</i> spp.
Filaree	<i>Erodium</i> spp.
Galinsoga	<i>Galinsoga ciliate</i>
Goldenrod	<i>Solidago</i> spp.
Ground ivy	<i>Glechoma hederacea</i>
Groundsel, common	<i>Senecio vulgaris</i>
Henbit	<i>Lamium amplexicaule</i>
Knawel	<i>Scleranthus annuus</i>
Knotweed, prostrate	<i>Polygonum aviculare</i>
Kochia	<i>Kochia scoparia</i>
Lambsquarters, common	<i>Chenopodium album</i>
Lawn burweed (spurweed)	<i>Soliva pterosperma</i>
Lespedeza, common	<i>Lespedeza striata</i>
Mallow, common	<i>Malva neglecta</i>
Parsley piert	<i>Alchemilla arvensis</i>
Pigweed, smooth	<i>Amaranthus hybridus</i>
Pigweed, redroot	<i>Amaranthus retroflexus</i>
Pigweed, tumble	<i>Amaranthus albus</i>
Pineapple weed	<i>Matricaria matricarioides</i>
Plantain, buckhorn	<i>Plantago lanceolate</i>
Puncture weed	<i>Tribulus terrestris</i>

(continued)

### Weeds Controlled or Suppressed – Turf (continued)

Purslane, common	<i>Portulaca oleracea</i>
Pusley, Florida	<i>Richardia scabra</i>
Redweed	<i>Melochia corchorifolia</i>
Rocket, London	<i>Sisymbrium irio</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>
Sorrel, red	<i>Rumex acetosella</i>
Speedwell	<i>Veronica</i> spp.
Spurge (annuals)	<i>Euphorbia</i> spp.
Spurge, prostrate	<i>Euphorbia humistrata</i>
Spurge, spotted	<i>Euphorbia maculate</i>
Star of Bethlehem	<i>Ornithogalum umbellatum</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Violet, wild	<i>Viola pratincola</i>
Violet, Johnny-jump-up	<i>Viola rafinesquii</i>
Wild garlic	<i>Allium vineale</i>
Wild onion	<i>Allium canadense</i>
Woodsorrel, creeping	<i>Oxalis corniculata</i>
Woodsorrel, yellow	<i>Oxalis stricta</i>

### POST-EMERGENCE CONTROL

#### Annual and Perennial Sedges

**Sulfentrazone MTZ DF** will provide control or suppression of the sedges listed in the table below when applied at 6 to 30 oz./acre (0.10 – 0.51 lb. a.i./A metribuzin and 0.07 – 0.34 lb. a.i./A sulfentrazone or 0.138 to 0.689 oz./1,000 ft.<sup>2</sup>). Make application at the highest rate appropriate for the turfgrass listed. Consult the **Tolerant Grasses** table for plant safety information. Do not exceed the maximum use rate. Rates that are below 16 oz./acre (0.27 lb. a.i./A metribuzin and 0.18 lb. a.i./A sulfentrazone or 0.367 oz./1,000 ft.<sup>2</sup>) will typically provide control of sedges for up to 60 days. A rate of 16 oz./acre (0.27 lb. a.i./A metribuzin and 0.18 lb. a.i./A sulfentrazone or 0.367 oz./1,000 ft.<sup>2</sup>) will provide approximately 70% control for up to 60 days. Yellow nutsedge (*Cyperus esculentus*) is the most susceptible species.

For optimum product performance, good spray coverage is essential. Temporary discoloration of some turfgrass species may occur from use of a surfactant. Use of surfactants is not recommended.

#### Sedges – Control or Suppression

Kyllinga, green	<i>Kyllinga brevifolia</i>
Kyllinga, false green	<i>Kyllinga gracillima</i>
Nutsedge, purple*	<i>Cyperus rotundus</i>
Nutsedge, yellow	<i>Cyperus esculentus</i>
Sedge, globe	<i>Cyperus globulosus</i>
Sedge, cylindric	<i>Cyperus retrorsus</i>
Sedge, Surinam	<i>Cyperus surinamensis</i>
Sedge, Texas	<i>Cyperus polystachyos</i>

\*Nutsedge, purple – to provide optimum control, split applications are recommended (see **Split Application** table below). Make initial application at 8 to 11 oz. per acre followed by a second application when active growth of purple nutsedge is visible. Do not exceed maximum use rate per acre (see **Tolerant Grasses** table).

SPLIT APPLICATIONS		
Grass Type	Treatment Option 1 (Oz./Acre)	Treatment Option 2 (Oz./Acre)
Warm Season Grasses (see <b>Tolerant Grasses</b> table)	Initial application: 8 oz. (0.14 lb. a.i./A metribuzin and 0.09 lb. a.i./A sulfentrazone)  Follow-up application 35 days after initial treatment: 8 oz.	Initial application: 11 oz. (0.19 lb. a.i./A metribuzin and 0.12 lb. a.i./A sulfentrazone)  Follow-up application 35 days after initial treatment: 8 to 11 oz.

### POST-EMERGENCE CONTROL

#### Grassy Weeds

**Sulfentrazone MTZ DF** will provide control or suppression of annual grass species listed in the table below at rate of 6 to 30 oz./acre (0.10 – 0.51 lb. a.i./A metribuzin and 0.07 – 0.34 lb. a.i./A sulfentrazone or 0.138 to 0.689 oz./1,000 ft.<sup>2</sup>). Make application at the highest rate appropriate for the turfgrass listed. Consult the **Tolerant Grasses** table for plant safety information. Do not exceed the maximum use rate. Rates that are below 16 oz./acre (0.27 lb. a.i./A metribuzin and 0.18 lb. a.i./A sulfentrazone or 0.367 oz./1,000 ft.<sup>2</sup>) will typically provide control of grass weeds for up to 60 days. For optimum performance, make application of **Sulfentrazone MTZ DF** when annual grass weeds are small and actively growing (pre-tiller stage).

For optimum product performance, good spray coverage is essential. Temporary discoloration of some turfgrass species may occur from use of a surfactant. Use of surfactants is not recommended.

#### Grass Weeds – Control or Suppression

Annual bluegrass	<i>Poa annua</i>
Crabgrass	<i>Digitaria</i> spp.
Dallisgrass	<i>Paspalum dilatatum</i>
Goosegrass	<i>Eleusine indica</i>
Sandbur	<i>Cenchrus</i> spp.

## STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage or disposal.

**PESTICIDE STORAGE:** Store product in original container only, away from other pesticides, fertilizer, food or feed. Store in a cool, dry place and avoid excess heat.

**In Case of Spill:** Avoid contact. Isolate areas and keep out animals and unprotected persons.

**To Confine Spills:** Dike surrounding area, sweep up spillage. Dispose of in accordance with information given under Pesticide Disposal. Wash spill area with water, absorb with sand, cat litter or commercial clay, sweep up and dispose of in an approved manner. Place damaged container in a large holding container. Identify contents per required hazardous waste labeling regulations.

**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 of the nearest EPA Regional Office for guidance.

### **CONTAINER HANDLING:**

**Non-refillable containers (50 pounds or less):** Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$  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.

**Non-refillable containers (Greater than 50 pounds):** Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$  full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

**Returnable/Refillable Containers:** Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. 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.



## **IMPORTANT: READ BEFORE USE**

### **CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**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.

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