



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs  
Registration Division (7505P)  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

EPA Reg. Number:

89167-51

Date of Issuance:

1-7-15

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

Ax-Mesotrione

Name and Address of Registrant (include ZIP Code):

Axion Ag Products, LLC  
4850 Hahns Peak Drive, Suite 200  
Loveland, CO 80538

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.
2. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, "EPA Reg. No. 89167-51."

Signature of Approving Official:

Shaja Joyner, Product Manager 20  
Fungicide and Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

Date:

1-7-15

3. Submit one copy of the revised final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 12/10/14

If you have any questions, please contact Erik Kraft at (703) 308-9358 or [kraft.erik@epa.gov](mailto:kraft.erik@epa.gov).

Shaja Joyner, Product Manager 20  
Fungicide and Herbicide Branch  
Registration Division (7505P)

Attachment

GROUP 27 HERBICIDE

# AX-MESOTRIONE

For Control of Annual Broadleaf Weeds in Field Corn, Seed Corn, Yellow Popcorn, Soybean, Sweet Corn, and Other Listed Crops

**Active Ingredient:**

Mesotrione (CAS No. 104206-82-8): ..... 40.0%

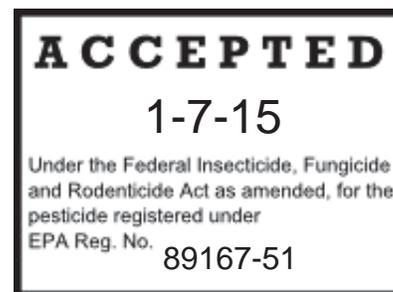
**Other Ingredients:** ..... 60.0%

**Total:**..... 100.0%

Contains 4 lbs. of active ingredient mesotrione per gallon.

**KEEP OUT OF REACH OF CHILDREN.**

## CAUTION



See inside for additional precautionary statements and directions for use.

**EPA Reg. No. 89167-XX**

**EPA Est. No.**

**Net Contents:** \_\_\_\_\_ gal.

MANUFACTURED FOR:  
Axion Ag Products, LLC  
4850 Hahns Peak Drive Suite 200  
Loveland, CO 80538

010515

FIRST AID
<p><b>If in eyes</b></p> <ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul> <p><b>If on skin or clothing</b></p> <ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<p><b>If inhaled</b></p> <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> <p><b>If swallowed</b></p> <ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advise.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by the poison control center or doctor.</li> <li>• Do not give anything to an unconscious person.</li> </ul>
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>
<p><b>HOTLINE NUMBER</b>  For 24-Hour Medical Emergency Assistance (Human or Animal), or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) Call 1-800-424-9300</p>

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

#### CAUTION

Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes, or clothing.

#### Personal Protective Equipment (PPE)

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

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves - Category A (e.g. barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, natural rubber  $\geq 14$  mils, polyethylene, polyvinyl chloride (PVC)  $\geq 14$  mils, or Viton®  $\geq 14$  mils)

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.

### **Engineering Control Statements**

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

<b>User Safety Recommendations</b>
<p><b>Users should:</b></p> <ul style="list-style-type: none"> <li>• Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.</li> <li>• Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.</li> <li>• Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.</li> </ul>

### **Environmental Hazards**

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate.

### **Surface Water Advisory**

This product may contaminate water through drift of spray in wind. This product has a high potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

### **Physical and Chemical Hazards**

Do not use or store near heat or open flame.

## **DIRECTIONS FOR USE**

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

Do not apply this product 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.

### **AGRICULTURAL USE REQUIREMENTS**

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

**Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.**

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

- Coveralls
- Shoes plus socks
- Chemical-resistant gloves - Category A (e.g., barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, natural rubber  $\geq 14$  mils, polyethylene, polyvinyl chloride (PVC)  $\geq 14$  mils, or Viton  $\geq 14$  mils)

### **PRODUCT INFORMATION**

AX-MESOTRIONE is a systemic preemergence and postemergence herbicide for the selective contact and residual control of broadleaf weeds in field corn, seed corn, yellow popcorn, sweet corn, and other listed crops. When used preemergence, weeds take up the product through the soil during emergence. Dry conditions following application may reduce the preemergence activity of AX-MESOTRIONE. If an activating rain (0.25 inches) is not received within 7-10 days after a preemergence application, where appropriate, rotary hoeing is suggested to activate the herbicide. When used postemergence, susceptible weeds take up the herbicide through the treated foliage and cease growth soon after application. Complete death of the weeds may take up to 2 weeks. The product is absorbed through the soil and/or by the foliage of emerged weeds.

AX-MESOTRIONE is not effective for the control of most grass weeds. Preemergence grass herbicides or postemergence grass herbicides can be tank mixed with AX-MESOTRIONE to provide broad spectrum weed control in corn (see appropriate section of label for this information). AX-MESOTRIONE can be applied postemergence following a preemergence grass herbicide application. AX-MESOTRIONE can also be used in combination with a burndown herbicide, prior to planting, to provide added burndown and residual weed control in field corn, seed corn, yellow popcorn, and sweet corn.

### **RESISTANCE MANAGEMENT**

AX-MESOTRIONE is a **Group 27 Herbicide** (contains the active ingredient mesotrione).

Naturally occurring biotypes of certain broadleaf weed species with resistance to triazines, glyphosate, PPO, HPPD and ALS inhibiting herbicides are known to exist. Performance of AX-MESOTRIONE is not affected by the presence of biotypes resistant to triazines, glyphosate, PPO or ALS inhibiting herbicides.

To prevent the risk of weeds developing resistance to AX-MESOTRIONE in corn, always use full labeled rates. If applying AX-MESOTRIONE postemergence after a mesotrione-containing preemergence herbicide, always add atrazine as a tank mix partner. No more than 0.24 lb. of mesotrione active ingredient must be applied per acre of corn per year (equivalent of 7.7 fl. oz. per acre per year of AX-MESOTRIONE). If additional herbicide must be applied, it is recommended that a different mode of action be used, i.e., other than an HPPD inhibitor (Group 27 Herbicide), AX-MESOTRIONE must be applied at full label rates to help prevent selection for, or population shifts toward, marginally tolerant weed species and/or species biotypes.

## **INTEGRATED PEST (WEED) MANAGEMENT**

AX-MESOTRIONE should be integrated into an overall weed and pest management strategy whenever the use of a 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.

## **USE PRECAUTIONS**

Severe corn injury resulting in yield loss may occur if AX-MESOTRIONE is applied postemergence to corn that was treated with Counter® or Lorsban®.

Severe corn injury resulting in yield loss may occur if AX-MESOTRIONE is applied foliar postemergence to corn in a tank mix with any organophosphate or carbamate insecticide.

Severe corn injury resulting in yield loss may occur if any organophosphate or carbamate insecticide is applied foliar postemergence within 7 days before or 7 days after AX-MESOTRIONE application.

**Do not** cultivate corn within 7 days before or after a AX-MESOTRIONE application as weed control from the AX-MESOTRIONE application may be reduced.

When weeds are stressed due to drought, heat, lack of fertility, flooding, or prolonged cool temperatures, control can be reduced or delayed since the weeds are not actively growing. Weed escapes or regrowth may occur when application is made under prolonged stress conditions. Optimum weed control will be obtained if an application of AX-MESOTRIONE is made following label directions when weeds are actively growing.

## **USE RESTRICTIONS**

Do not apply AX-MESOTRIONE to white popcorn or ornamental (Indian) corn.

**Do not** apply this product through any type of irrigation system unless specified otherwise under the specific crop section on the label.

**Do not** apply this product with suspension fertilizers as the carrier.

**Do not** apply AX-MESOTRIONE postemergence in a tank mix with emulsifiable concentrate grass herbicides, unless specifically addressed under one of the tank mix sections of this label, or injury may occur.

**Do not** use aerial application to apply AX-MESOTRIONE unless specified otherwise under the specific crop section on the label.

AX-MESOTRIONE may be applied with pyrethroid type insecticides (e.g., Warrior®).

## **SPRAY DRIFT RESTRICTIONS**

Avoid drift onto adjacent crops and other nontarget areas.

**RESTRICTION:** For aerial application use only nozzles producing coarse-ultra coarse droplets. Do not use nozzles producing fine-medium size droplets.

Do not apply when weather conditions may cause drift to nontarget areas. Drift may result in injury to adjacent crops and vegetation. To avoid spray drift, **DO NOT** apply when wind speed is greater than 10 mph or during periods of temperature inversions. Use of larger droplet sizes will also reduce spray drift.

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

The interaction of equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making a decision.

### **Information on Droplet Size**

The most effective way to reduce spray drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavorable environmental conditions. Refer to the Aerial Application section for specific instructions regarding droplet size.

### **Controlling Droplet Size**

- Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher rate nozzles instead of increasing pressure.
- Number of Nozzles - Use the minimum number of nozzles that provide uniform coverage.

### **Sensitive Areas**

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

## ADDITIONAL SPRAY DRIFT RESTRICTIONS FOR AERIAL APPLICATIONS

The distance of the outer-most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.

Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they must be observed.

Spray must be released at the lowest height consistent with effective weed control and flight safety.

For best results, each specific aerial application vehicle used should be quantifiably pattern tested for aerial application of AX-MESOTRIONE initially and every year thereafter.

**RESTRICTION:** For aerial application use only nozzles producing coarse-ultra coarse droplets. Do not use nozzles producing fine-medium size droplets.

For some 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.

Applications must not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

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

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect drift.

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

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

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

## **APPLICATION INFORMATION**

### **PREEMERGENCE GROUND APPLICATION**

Apply AX-MESOTRIONE preemergence with a carrier volume of 10-60 gals./A.

Spray nozzles must be uniformly spaced, the same size and type, and must provide accurate and uniform application. Use spray nozzles that provide medium to coarse droplet size to provide good coverage and avoid drift. Apply in a spray volume of 10-60 gals./A using water or liquid fertilizer (excluding suspension fertilizers) as the carrier. Use a pump that can maintain a pressure of at least 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures may be used with extended range or drift reduction nozzles.

Always ensure that agitation is maintained until spraying is completed, even if stopped for brief periods of time. If the agitation is stopped for more than 5 minutes, resuspend the spray solution by running on full agitation prior to spraying.

### **POSTEMERGENCE GROUND APPLICATION**

Spray nozzles must be uniformly spaced, the same size and type, and must provide accurate and uniform application. Use spray nozzles that provide medium to coarse droplet size to provide good coverage and avoid drift. Good weed coverage is essential for optimum weed control. Boom height for broadcast over-the-top applications must be based on the height of the crop - at least 15 inches above the crop canopy.

Apply in a spray volume of 10-30 gals./A using water as a carrier. Use a pump that can maintain a pressure of at least 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures may be used with extended range or drift reduction nozzles. When weed foliage is dense, use a minimum of 20 gals.

Flat fan nozzles of 80° or 110° are recommended for optimum postemergence coverage. Do not use floodjet nozzles or controlled droplet application equipment for postemergence applications.

Nozzles may be angled forward 45° to enhance penetration of the crop and provide better coverage. Ensure that all in-line strainer and nozzle screens in the sprayer are 50-mesh or coarser.

Always ensure that agitation is maintained until spraying is completed, even if stopped for brief periods of time. If the agitation is stopped for more than 5 minutes, resuspend the spray solution by running on full agitation prior to spraying.

## Aerial Application

**RESTRICTION:** AX-MESOTRIONE can be applied aerially only to corn and sugarcane.

**RESTRICTION:** For aerial application use only nozzles producing coarse-ultra coarse droplets. Do not use nozzles producing fine-medium size droplets.

AX-MESOTRIONE may be applied aerially for preemergence or postemergence weed control in corn only in the following states: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Nebraska, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

AX-MESOTRIONE may be applied aerially for preemergence or postemergence weed control in sugarcane only in the following states: Florida, Louisiana and Texas.

Applications must be made in a minimum of 2 gallons of water per acre.

## SPRAY ADDITIVES

### POSTEMERGENCE ADJUVANTS

When an adjuvant is to be used with this product, the use of an adjuvant that meets the standards of the Chemical Producers and Distributors Association (CPDA) adjuvant certification program is recommended.

The following adjuvant recommendations are intended primarily for AX-MESOTRIONE use in corn. Refer to the use directions section of each crop section for specific adjuvant recommendations.

### POSTEMERGENCE APPLICATIONS TO FIELD CORN AND SEED CORN

For postemergence applications made after the crop has emerged, add crop oil concentrate (COC) to the spray solution at the rate of 1.0 gal./100 gals. of water (1.0% v/v). The use of a nonionic surfactant (NIS) at 1 qt./100 gallons of water (0.25% v/v) instead of COC is allowed, but the weed control achieved with COC is consistently better than NIS. **The use of methylated seed oil (MSO) adjuvants or MSO blend adjuvants for postemergence applications of AX-MESOTRIONE may cause severe crop injury to occur. Do not use MSO adjuvants for postemergence use unless directed for a specific tank mix under the AX-MESOTRIONE TANK MIXTURES FOR CORN section of this label, or unless permitted by a supplemental AX-MESOTRIONE label.** In addition to COC, always add spray grade UAN (e.g., 28-0-0) to the spray solution at a rate of 2.5% (v/v) or AMS at 8.5 lb./100 gals. of spray solution, except if precluded elsewhere on this label or by a supplemental AX-MESOTRIONE label.

### POSTEMERGENCE APPLICATIONS TO SWEET CORN AND YELLOW POPCORN

**Do not add UAN or AMS when making postemergence applications of AX-MESOTRIONE to yellow popcorn or sweet corn, or severe crop injury may occur.**

For postemergence applications to yellow popcorn and sweet corn, the use of a nonionic surfactant (NIS) instead of a crop oil concentrate (COC) is recommended, so as to minimize the risk of crop injury. A COC may be used, and will increase the level of weed control achieved, especially under dry growing conditions, but the risk of crop injury is increased significantly under lush growing conditions. For optimum control, the addition of atrazine is recommended wherever rotational or local atrazine restrictions allow.

## **PREEMERGENCE ADJUVANTS**

For AX-MESOTRIONE preplant or preemergence applications, and where weeds are present, the use of any adjuvant for agricultural use is permitted. In these situations, MSO type adjuvants are typically better than COC type adjuvants, which are typically better than NIS type adjuvants for enhancing weed control. UAN or AMS can be added and typically provides better weed control than not adding one of these. If AX-MESOTRIONE is being tank mixed with another registered herbicide in this situation, refer to the tank mix partner label for adjuvant precautions and restrictions.

## **SPRAY EQUIPMENT**

### **Cleaning Equipment After AX-MESOTRIONE Application**

Special attention must be given to cleaning equipment before spraying a crop other than corn. Mix only as much spray solution as needed.

1. Flush tank, hoses, boom, and nozzles with clean water.
2. Prepare a cleaning solution of 1 gal. of household ammonia per 25 gals. of water. Many commercial spray tank cleaners may be used.
3. Use a pressure washer to clean the inside of the spray tank with this solution. Take care to wash all parts of the tank, including the inside top surface. If a pressure washer is not available, completely fill the sprayer with the cleaning solution to ensure contact of the cleaning solution with all internal surfaces of the tank and plumbing. Start agitation in the sprayer and thoroughly recirculate the cleaning solution for at least 15 minutes. All visible deposits must be removed from the spraying system.
4. Flush hoses, spray lines, and nozzles for at least 1 minute with the cleaning solution.
5. Dispose of rinsate from steps 1-3 in an appropriate manner.
6. Repeat steps 2-5.
7. Remove nozzles, screens, and strainers and clean separately in the ammonia solution after completing the above procedures.
8. Rinse the complete spraying system with clean water.

## **MIXING PROCEDURES**

Refer to the **Crop Use Directions** sections of this label for recommended tank mixes.

Always refer to labels of other pesticide products for mixing directions and precautions which may differ from those outlined here. Use in accordance with the most restrictive of label limitations and precautions. No label dosage rates may be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. Do not tank

mix AX-MESOTRIONE with any other insecticide, fungicide, fertilizer solution, or adjuvant not recommended on the label without testing compatibility, as poor mixing may result. It is recommended that the compatibility of any tank mix combination be tested on a small scale such as a jar test before actual tank mixing.

Follow the mixing instructions for adding AX-MESOTRIONE to the spray tank:

1. Only use sprayers in good running condition with good agitation. Ensure the sprayer is cleaned according to instructions on label of the product used prior to AX-MESOTRIONE. For postemergence applications, use only clean water for the spray solution. Ensure that all in-line strainer and nozzle screens in the sprayer are 50-mesh or coarser. Screens finer than 50-mesh should not be used.
2. Liquid fertilizer (excluding suspension fertilizers) may be used as the carrier for preemergence applications.
3. Begin to fill sprayer tank or premix tank with clean water and engage agitator. Agitation must be continued throughout the entire mixing and spraying procedure.
4. When the sprayer or premix tank is half full of water, add AMS and agitate until completely dispersed.
5. Next add AX-MESOTRIONE slowly and agitate until completely dissolved. Wait at least 1 minute after the last of the AX-MESOTRIONE has been added to the tank to allow for complete dispersion. A longer agitation period may be required to disperse AX-MESOTRIONE when using cold water from sources such as deep drilled wells.
6. If tank mixing, add the tank mix product next.
7. Finally, add adjuvant and UAN, if needed, and then continue to fill tank to desired level with water.

## **WEEDS CONTROLLED**

AX-MESOTRIONE applied as directed in this label will control or partially control the weeds listed in Tables 1 and 2.

Where reference is made to weeds partially controlled, partial control can either mean erratic control (good to poor) or consistent control at a level below that generally considered acceptable for commercial weed control.

For best postemergence results, apply AX-MESOTRIONE to actively growing weeds. Dry weather following preemergence application of AX-MESOTRIONE may reduce residual weed control effectiveness. If irrigation is available, apply ½ to 1 inch of water after preemergence application. If irrigation is not available, a uniform shallow cultivation is recommended as soon as weeds emerge.

AX-MESOTRIONE applied alone or in mixture with atrazine will not provide consistent or effective control of weeds identified as resistant to postemergence HPPD inhibiting herbicides.

Refer to the crop sections on this label for specific rates and use directions.

Table 1. Weeds Controlled With Postemergence Applications of AX-MESOTRIONE

Weed Common Name	Weed Scientific Name	AX- MESOTRIONE 3 fl. oz./A	AX- MESOTRIONE 2.5-3.0 fl. oz./A + Atrazine <sup>1</sup>
		Apply to Weeds <5 Inches Tall <sup>2</sup>	
Amaranth, palmer	<i>Amaranthus palmeri</i>	PC <sup>3</sup>	C <sup>3</sup>
Amaranth, powell	<i>Amaranthus powellii</i>	C	C
Amaranth, spiny	<i>Amaranthus spinosus</i>	C	C
Atriplex	<i>Chenopodium orach</i>	C	C
Broadleaf signalgrass	<i>Urochloa platyphylla</i>	C <sup>3</sup>	C <sup>3</sup>
Buckwheat, wild	<i>Polygonum convolvulus</i>	PC	PC
Buffalobur	<i>Solanum rostratum</i>	C	C
Burcucumber	<i>Sicyos angulatus</i>	PC	C <sup>3</sup>
Carpetweed	<i>Mollugo verticillata</i>	C	C
Carrot, wild	<i>Daucus carota</i>	PC	C
Chickweed, common	<i>Stellaria media</i>	C	C
Cocklebur, common	<i>Xanthium strumarium</i>	C	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	C <sup>3</sup>	C <sup>3</sup>
Dandelion	<i>Taraxacum officinale</i>	NC	PC
PC Dock, curly	<i>Rumex crispus</i>	PC	PC
Galinsoga	<i>Galinsoga parviflora</i>	C	C
Hemp	<i>Cannabis sativa</i>	C	C
Horsenettle	<i>Solanum carolinense</i>	PC	C
Jimsonweed	<i>Datura stramonium</i>	C	C
Horseweed (marestail)	<i>Conyza Canadensis</i>	PC	C
Knotweed, prostrate	<i>Polygonum aviculare</i>	PC	PC
Kochia	<i>Kochia scoparia</i>	PC <sup>3</sup>	C <sup>3</sup>
Lambsquarters, common	<i>Chenopodium album</i>	C	C
Mallow, Venice	<i>Hibiscus trionum</i>	NC	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, pitted	<i>Ipomoea lacunose</i>	PC	C
Mustard, wild	<i>Brassica kaber</i>	C	C
Nightshade, black	<i>Solanum nigrum</i>	C	C
Nightshade, Eastern black	<i>Solanum ptycanthum</i>	C	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	PC	PC
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	C
Pigweed, tumble	<i>Amaranthus albus</i>	C	C
Pokeweed, common	<i>Phytolacca Americana</i>	PC	PC
Potatoes, volunteer	<i>Solanum spp.</i>	C	C
Pusley, Florida	<i>Richardia scabra</i>	C <sup>3</sup>	C <sup>3</sup>
Ragweed, common	<i>Ambrosia artemisiifolia</i>	PC	C
Ragweed, giant	<i>Ambrosia trifida</i>	C <sup>3</sup>	C
Sesbania, hemp	<i>Sesbania exaltata</i>	C	C
Sida, prickly (teaweed)	<i>Sida spinosa</i>	NC	C <sup>3</sup>
Smartweed, ladythumb	<i>Polygonum persicaria</i>	C <sup>3</sup>	C
Smartweed, pale	<i>Polygonum lapathifolium</i>	C <sup>3</sup>	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C <sup>3</sup>	C
Sunflower, common	<i>Helianthus annuus</i>	C	C
Thistle, Canada	<i>Cirsium arvense</i>	NC	PC
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	C <sup>3</sup>	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C <sup>3</sup>	C

<sup>1</sup> AX-MESOTRIONE tank mixture with atrazine is approved only for use on corn and sugarcane.

<sup>2</sup> Under certain situations weeds can be controlled at larger than listed sizes, however to protect crop yield, manage weed resistance and provide consistent control, treat weeds before they exceed 5 inches in height.

<sup>3</sup> Apply before weed exceeds 3 inches in height.

C = Control

PC = Partial Control

NC = Not Controlled

**Table 2. Weeds Controlled With Preemergence Applications of AX-MESOTRIONE**

Common Name	Scientific Name	AX-MESOTRIONE Applied Alone	AX-MESOTRIONE +Atrazine <sup>1</sup>
Amaranth, palmer	<i>Amaranthus palmeri</i>	C	C
Amaranth, powell	<i>Amaranthus powellii</i>	C	C
Amaranth, spiny	<i>Amaranthus spinosus</i>	C	C
Broadleaf signalgrass	<i>Urochloa platyphylla</i>	PC	PC
Buffalobur	<i>Solanum rostratum</i>	C	C
Carpetweed	<i>Mullugo verticillata</i>	C	C
Chickweed, common	<i>Stellaria media</i>	C	C
Cocklebur, common	<i>Xanthium strumarium</i>	PC	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	PC	PC
Galinsoga	<i>Galinsoga parviflora</i>	C	C
Jimsonweed	<i>Datura stramonium</i>	C	C
Kochia	<i>Kochia scoparia</i>	PC	C
Lambsquarters, common	<i>Chenopodium album</i>	C	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, pitted	<i>Ipomoea lacunose</i>	PC	C
Nightshade, eastern black	<i>Solanum ptycanthum</i>	C	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	C
Pigweed, tumble	<i>Amaranthus albus</i>	C	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C	C
Ragweed, giant	<i>Ambrosia trifida</i>	PC	C
Smartweed, ladysthumb	<i>Polygonum persicaria</i>	C	C
Smartweed, pale	<i>Polygonum lapathifolium</i>	C	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C	C
Sunflower, common	<i>Helianthus annuus</i>	PC	C
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	C	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C	C

<sup>1</sup>AX-MESOTRIONE tank mixture with atrazine is approved only for use on corn grain sorghum and sugarcane. Refer to the crop sections on this label for specific use directions.

C = Control                      PC = Partial Control

## ROTATIONAL CROPS

When AX-MESOTRIONE is applied as directed on this label, follow the crop rotation intervals in Table 3. If AX-MESOTRIONE is tank mixed with other products, follow the most restrictive product's crop rotation interval.

**Table 3. Time Interval Between AX-MESOTRIONE Application and Replanting or Planting of Rotational Crop**

<b>Crop</b>	<b>Replant/Rotational Interval</b>
Asparagus Corn (all types) Cranberry Flax Kentucky bluegrass grown for seed Millet, pearl Oats Rhubarb Ryegrass (perennial and annual) grown for seed Sorghum (grain and sweet) Sugarcane Tall fescue grown for seed	Anytime
Small grain cereals including wheat, barley, and rye	4 months
Alfalfa Blueberry Canola Cotton Currant Lingonberry Okra Peanuts Peas <sup>1,2</sup> Potato Rice Snap beans <sup>12</sup> Soybeans Sunflowers Tobacco	10 Months
Cucurbits Dry beans Red clover Sugar beets All other rotational crops	18 Months

<sup>1</sup>Plant these rotational crops only if the following criteria below have been met. If all criteria are not met, plant peas and snap beans a minimum of 18 months following AX-MESOTRIONE application.

- A minimum of 20" of rainfall plus irrigation has been received between application and planting of the rotational crop.
- Soil pH is 6.0 or greater.
- Application of AX-MESOTRIONE at 3 fl. oz./A or less applied no later than June 30th the year preceding rotational crop planting.
- No other HPPD herbicides (e.g., AX-MESOTRIONE® Xtra, Halex® GT, Lexar® EZ, Lumax® EZ, Zemax®, Armezon™, Balance® Flexx, Capreno®, Corvus®, Impact®, or Laudis®) were applied the year prior to planting peas and snap beans.

<sup>2</sup>Do not plant peas or snap beans on sand, sandy loam or loamy sand soils in Minnesota or Wisconsin.

<b>CROP USE DIRECTIONS</b>
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**CORN**

AX-MESOTRIONE may be applied by ground for preemergence or postemergence weed control in field corn, seed corn, yellow popcorn, and sweet corn.

AX-MESOTRIONE may also be applied aerially for preemergence or postemergence weed control only in the following states: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

Refer to seed company recommendations for use on field corn inbred lines. Special adjuvant restrictions must be followed for postemergence applications of AX-MESOTRIONE in yellow popcorn or sweet corn (see the **SPRAY ADDITIVES** section of this label). Do not apply AX-MESOTRIONE to white popcorn or ornamental (Indian) corn.

Postemergence applications (after crop emergence) of AX-MESOTRIONE may cause crop bleaching in some yellow popcorn and sweet corn hybrids. Crop bleaching is typically transitory and has no effect on final yield or quality. However, herbicide sensitivity in yellow popcorn and sweet corn varies widely, and all yellow popcorn and sweet corn hybrids have not been tested. Contact your popcorn or sweet corn company, Fieldman, or University Specialist about hybrid recommendations before making a postemergence application of AX-MESOTRIONE to yellow popcorn or sweet corn. Do not include nitrogen based adjuvants (UAN or AMS) when making postemergence applications of AX-MESOTRIONE to yellow popcorn or sweet corn.

Temporary crop response (transient bleaching) from postemergence applications to field corn may occur under extreme weather conditions or when the crop is suffering from stress. Field corn quickly outgrows these effects and develops normally.

Do not apply more than a total of 7.7 fl. oz. (0.24 lb. mesotrione active ingredient) of AX-MESOTRIONE per acre per season. Do not make more than 2 applications of AX-MESOTRIONE per season. Do not exceed 3.0 fl. oz. (0.094 lb. a.i./A) in a single postemergence application. Do not make the second application of AX-MESOTRIONE within 14 days of the first application.

Apply AX-MESOTRIONE for the control of broadleaf and grass weeds listed in Tables 1 and 2.

Corn may be treated up to 30 inches tall or up to the 8-leaf stage of corn growth. Do not feed or harvest forage, grain, or stover within 45 days after application.

**AX-MESOTRIONE USED ALONE - POSTEMERGENCE**

Apply AX-MESOTRIONE at 3.0 fl. oz./A per application. Always add an appropriate adjuvant to the spray tank (see the **SPRAY ADDITIVES** section of this label).

For best results, apply AX-MESOTRIONE to actively growing weeds. For a list of weeds controlled see Table 1. Susceptible weeds which emerge soon after application of AX-MESOTRIONE may be controlled after they absorb the herbicide from the soil. AX-MESOTRIONE will not control most grass weeds.

Two postemergence applications of AX-MESOTRIONE may be made with the following restrictions.

- Only one postemergence application may be made if AX-MESOTRIONE has been applied preemergence. Do not exceed a total of two applications per season. Do not exceed a total of 7.7 fl. oz./A (0.24 lb. a.i./A) of AX-MESOTRIONE per season.
- Do not make the second application within 14 days of the first application.
- Application of AX-MESOTRIONE at rates less than 3.0 fl. oz./A (0.094 lb. a.i./A) postemergence may result in incomplete weed control and loss of residual control.
- Do not exceed a total of 6.0 fl. oz./A (0.19 lb. a.i./A) for the two postemergence applications.
- If AX-MESOTRIONE is applied postemergence to ground that received a preemergence application of a mesotrione-containing herbicide, atrazine must be tank mixed with AX-MESOTRIONE.
- If atrazine is mixed with AX-MESOTRIONE, do not apply to corn that is more than 12 inches in height.
- Corn may be treated up to 30 inches tall or up to the 8-leaf stage of corn growth. Do not harvest forage, grain, or stover within 45 days after application.

## **AX-MESOTRIONE USED ALONE - PREEMERGENCE**

Apply AX-MESOTRIONE alone at 6.0-7.7 fl. oz./A (0.188-0.24 lb. a.i./A) by ground sprayers in a spray volume of 10-30 gals. of water (up to 80 gals. if applied with liquid fertilizers) per acre for broadleaf weed control. For a list of weeds controlled, refer to Table 2. AX-MESOTRIONE may be tank mixed with preemergence grass herbicides for grass control. Refer to the tank mix section for a list of partners.

## **AX-MESOTRIONE TANK MIXTURES FOR CORN**

AX-MESOTRIONE may be tank mixed with other registered herbicides for improved spectrum of weed control in burndown, preemergence or postemergence applications. Additionally these tank mixtures can be used to include a different mode of action herbicide to help control or manage the development of resistant weed biotypes.

### **Burndown Tank Mixtures in Corn**

AX-MESOTRIONE may be applied in tank mixture with other registered herbicides for burndown plus residual weed control.

For improved broadleaf weed control with limited residual control prior to planting corn and before corn emergence, apply AX-MESOTRIONE at 3.0 fl. oz./A in tank mixes with Gramoxone® brands, Roundup® brands, Touchdown® brands, dicamba brands (e.g. Banvel®) and/or 2,4-D. For greater residual control, use 6.0-7.7 fl. oz./A of AX-

MESOTRIONE (see Table 2) with the above products. Use the adjuvant system recommended by the burndown herbicide. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

### Preemergence Tank Mixtures in Corn

AX-MESOTRIONE may be applied at a rate of 5.3-7.7 fl. oz./A in tank mixture with other registered herbicides (Table 4) for preemergence residual weed control. Refer to Table 2 for a list of weeds controlled by AX-MESOTRIONE and AX-MESOTRIONE plus AAtrex® applied preemergence.

**Table 4. AX-MESOTRIONE Tank Mixtures for Preemergence Application in Corn<sup>1</sup>**

AAtrex	Degree Xtra®	Harness Xtra® 5.6L
Bicep Lite II Magnum®	Dual II Magnum®	Keystone®
Bicep II Magnum®	Expert®	Keystone® LA
Cinch®	Fultime®	Outlook®
Cinch®ATZ	Guardman Max®	Prowl®
Cinch® ATZ Lite	Harness®	Surpass® EC
Degree®	Harness Xtra®	TopNotch®

<sup>1</sup> Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

### Postemergence Tank Mixtures in Corn

The tank mixtures with AX-MESOTRIONE identified in Table 5 may be applied postemergence to corn (i.e., after corn has emerged). Unless specified otherwise on this label or a AXION supplemental label, do not apply AX-MESOTRIONE at less than 3.0 fl. oz./A. Application of AX-MESOTRIONE at rates less than 3.0 fl. oz. (0.094 lb. a.i./A) postemergence may result in a loss of residual control.

Always add an appropriate adjuvant to the spray tank (see the **SPRAY ADDITIVES** section of this label). Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled. Not all of the tank mix pesticides listed are registered for field corn, yellow popcorn, or sweet corn.

**Table 5. AX-MESOTRIONE Tank Mixtures for Postemergence Application in Corn**

<b>Tank-Mix Partners<sup>1</sup></b>	<b>Directions</b>
AAtrex® 4L AAtrex® Nine-O®	<ul style="list-style-type: none"> <li>Refer to Table 1 on this label for application rates and weeds controlled.</li> </ul>
Accent® Accent®Q	<ul style="list-style-type: none"> <li>Use this mixture for additional grass control. Refer to product label for list of weeds controlled.</li> </ul>
Basagran®	<ul style="list-style-type: none"> <li>Use this mixture for additional broadleaf weed control. Refer to product label for list of weeds controlled.</li> </ul>
Basis® Basis Gold®	<ul style="list-style-type: none"> <li>Use this mixture for additional weed control. Refer to product label for list of weeds controlled.</li> </ul>

<b>Tank-Mix Partners<sup>1</sup></b>	<b>Directions</b>
Bicep II Magnum Bicep Lite II Magnum	<ul style="list-style-type: none"> <li>• When using these tank mixtures, it is recommended to leave the nitrogen based adjuvant (UAN or AMS) out of the mixture or apply as a post-directed spray to minimize contact with crop foliage.</li> <li>• To further reduce the risk of crop injury, the user may also leave out the crop oil concentrate (COC), or replace it with a nonionic surfactant (NIS).</li> <li>• In all cases, the control of emerged weeds may be reduced somewhat due to less than optimum adjuvant effect or weed coverage.</li> </ul>
Buctril® Moxy®	<ul style="list-style-type: none"> <li>• Use this mixture for additional broadleaf weed control.</li> <li>• Add Buctril (2 lb./gal.) or Moxy (2 lb./gal.) at a rate up to 6fl. oz./A.</li> <li>• Add Buctril (4 lb./gal.) at a rate up to 3 fl. oz./A.</li> </ul>
Expert	<ul style="list-style-type: none"> <li>• For use only in glyphosate tolerant corn (e.g. Agrisure® GT, Roundup Ready®).</li> <li>• Application of this mixture to a corn hybrid that is not glyphosate tolerant will result in crop death.</li> <li>• Do not add urea ammonium nitrate (UAN) or methylated seed oil (MSO) type adjuvants to this tank mixture or crop injury may occur.</li> </ul>
Ignite® Ignite® 280 SL	<ul style="list-style-type: none"> <li>• Use this tank mixture only on corn designated as Libertylink® or warranted as being tolerant to glufosinate.</li> <li>• Application of this mixture to a corn hybrid that is not glufosinate tolerant will result in severe crop injury or death.</li> <li>• Do not use crop oil concentrate (COC) as an adjuvant for this mixture or severe crop injury may occur.</li> </ul>
Lightning®	<ul style="list-style-type: none"> <li>• For use only on corn designated as Clearfield® corn or warranted by BASF as being tolerant to Lightning Herbicide.</li> <li>• Application of this mixture to a corn hybrid that is not Lightning tolerant will result in severe crop injury or death.</li> <li>• Do not use a Methylated Seed Oil (MSO), or an MSO blend with this mixture or severe crop injury may result.</li> </ul>
Northstar®	<ul style="list-style-type: none"> <li>• Use this mixture for additional weed control. Refer to product label for list of weeds controlled.</li> </ul>
Peak®	<ul style="list-style-type: none"> <li>• Use this mixture for additional weed control. Refer to product label for list of weeds controlled.</li> </ul>
Spirit®	<ul style="list-style-type: none"> <li>• Use this mixture for additional weed control. Refer to product label for list of weeds controlled.</li> </ul>
Steadfast® Steadfast® ATZ Steadfast® Q	<ul style="list-style-type: none"> <li>• Use this mixture for additional weed control. Refer to product label for list of weeds controlled.</li> </ul>
Stout®	<ul style="list-style-type: none"> <li>• Use this mixture for additional weed control. Refer to product label for list of weeds controlled.</li> </ul>

Tank-Mix Partners <sup>1</sup>	Directions
Touchdown Roundup Solo glyphosate products	<ul style="list-style-type: none"> <li>• For use only in glyphosate tolerant corn (e.g. Agrisure GT, Roundup Ready).</li> <li>• Application of this mixture to a corn hybrid that is not glyphosate tolerant will result in crop death.</li> <li>• Add spray-grade ammonium sulfate (AMS) at a rate that delivers 8.5-17.0 lbs. of AMS/100 gallons of water.</li> <li>• If the glyphosate product label calls for an adjuvant in addition to AMS, add a non-ionic surfactant (NIS) at 0.25-0.5% v/v (1-2 quart/100 gallons).</li> <li>• Do not add urea ammonium nitrate (UAN), crop oil concentrate (COC), or methylated seed oil (MSO) type adjuvants to this tank mixture or crop injury may occur.</li> </ul>

<sup>1</sup> Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

## ASPARAGUS

AX-MESOTRIONE can be applied broadcast or banded at a rate of 3.0-7.7 fl. oz./A to asparagus as a spring application prior to spear emergence, as a post-harvest application (after final harvest), or both.

Use the 3.0 fl. oz./A rate for postemergence control or partial control of the emerged weeds listed in Table 1. Use the 6.0-7.7 fl. oz./A rate for preemergence control or partial control of the weeds listed in Table 2. For banded applications, the application must be made to account for band width, i.e. to deliver 3.0-7.7 fl. oz. per treated acre. For the best preemergence weed control with spring applications, AX-MESOTRIONE must be applied after fern mowing, disking or other tillage operation but prior to asparagus spear emergence.

When making post-harvest applications, the rate applied preemergence in the spring must be taken into account so as not to exceed the 7.7 fl. oz./A/year rate limit. Post-harvest applications must be made in a way that minimizes contact with any standing asparagus spears or ferns and maximizes contact with the weeds and/or soil, e.g. by using a directed or semi-directed type application, or crop injury may occur. With post-harvest applications, the use of an adjuvant will increase the risk of crop injury.

If weeds are emerged at the time of the AX-MESOTRIONE application, the addition of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v or a nonionic surfactant (NIS) at the rate of 0.25% v/v is recommended. In addition to COC or NIS, a spray grade UAN (e.g. 28-0-0) at the rate of 2.5% v/v or ammonium sulfate (AMS) at the rate of 8.5 lb./100 gallons of spray solution may be added for improved burndown of emerged weeds. If weeds have not yet emerged, no adjuvant is recommended.

### Restrictions:

1. Do not apply more than 7.7 fl. oz./A of AX-MESOTRIONE per year.
2. Do not make more than two AX-MESOTRIONE applications per year.

## **BLUEGRASS, RYEGRASS (ANNUAL AND PERENNIAL) AND TALL FESCUE GROWN FOR SEED**

AX-MESOTRIONE can be applied to bluegrass, annual ryegrass, perennial ryegrass, or tall fescue which is grown for seed. AX-MESOTRIONE can be applied as a preemergence application to bare soil (new seeding) or as a postemergence application to an emerged grass crop.

**Preemergence Application:** Apply AX-MESOTRIONE as a broadcast, surface spray at a rate of 6.0 fl. oz./A to a newly seeded crop. The AX-MESOTRIONE application must be made prior to crop and weed emergence. Rainfall or irrigation as the newly seeded grass crop emerges from the soil may increase the risk of injury from AX-MESOTRIONE. Grass crop injury symptoms include temporary bleaching of newly emerged leaves, or in extreme conditions, stunting. For a list of preemergence weeds controlled or partially controlled see Table 2. In addition to the weeds listed in Table 2, AX-MESOTRIONE applied preemergence will control manna grass.

**Postemergence Application:** Apply AX-MESOTRIONE as a broadcast postemergence spray at a rate of 3.0-6.0 fl. oz./A to emerged bluegrass, perennial ryegrass or tall fescue grown for seed. Use the 3.0 fl. oz./A rate for postemergence control or partial control of the weeds listed in Table 1. In addition to the weeds listed in Table 2, AX-MESOTRIONE applied postemergence will control manna grass (up to 3 tillers).

Use the 6.0 fl. oz./A rate for postemergence weed control plus extended residual weed control (see Table 2). The addition of a crop oil concentrate type adjuvant at 1% v/v or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v is recommended. Postemergence applications of AX-MESOTRIONE may result in temporary bleaching of the grass crop.

In addition to COC or NIS, a spray grade UAN (e.g. 28-0-0) at the rate of 2.5% v/v or ammonium sulfate (AMS) at the rate of 8.5 lb./100 gallons of spray solution may also be added for improved control of emerged weeds. The addition of UAN or AMS will improve consistency of postemergence weed control but will also increase the risk of grass crop injury, especially at AX-MESOTRIONE rates greater than 3.0 fl. oz./A. If grass crop injury is a concern, do not add UAN or AMS to the spray solution.

Tank mixing other pesticides with AX-MESOTRIONE postemergence may increase the risk of crop injury. Avoid adding pesticides with emulsifiable concentrate (EC) type formulations to AX-MESOTRIONE for applications made postemergence to the crop.

### **Restrictions:**

1. Do not harvest the grass crop for seed or straw within 60 days following the application of AX-MESOTRIONE.
2. Do not graze or feed forage from treated areas within 14 days following harvest of seed or straw and at least 74 days after application of AX-MESOTRIONE.
3. Do not make more than two applications of AX-MESOTRIONE per year.
4. Do not apply more than 6 fl. oz./A in a single application and not more than 9 fl. oz./A of AX-MESOTRIONE per year.
5. Applications of AX-MESOTRIONE to grasses grown for seed species not listed on this label may result in severe injury.

## BUSH AND CANEBERRIES (CROP GROUP 13-07A and 13-07B)

**Note:** Not all cultivars and types of berries that are included within the Environmental Protection Agencies definition of bush and caneberreries (Crop Subgroups 13-07A and 13-07B) have been tested and shown to have adequate crop safety to AX-MESOTRIONE Herbicide. Those that have been tested, and are believed to be reasonably fit, are listed below along with use directions for that crop. If AX-MESOTRIONE is used on bush or caneberreries not listed below, severe crop injury may occur.

AX-MESOTRIONE may be applied as a pre-bloom post-directed spray in high bush blueberry, lingonberry, red currant, black currant, black raspberry, red raspberry, and blackberry. For a list of weeds controlled see Tables 1 and 2. AX-MESOTRIONE may be applied in bush or caneberreries at a rate up to 6 fl. oz./A. If a split application weed control program is desired, 3 fl. oz./A followed by 3 fl. oz./A may be used, but no more than two applications per crop per year are allowed and not more than 6 fl. oz./A in total per year. If two applications are made, they must be made no closer than 14 days apart. The use of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v is recommended, but avoid using COC adjuvants that are injurious to bush or caneberry leaves. Do not apply AX-MESOTRIONE to bush or caneberreries after the onset of the bloom stage or illegal residues may occur.

In low bush blueberries, AX-MESOTRIONE may only be applied in the non-bearing year. This application may be a broadcast application. Up to 6 fl. oz./A of AX-MESOTRIONE may be applied in a single application, or 3 fl. oz./A followed by 3 fl. oz./A if used in a split application program. No more than two applications per year are allowed and not more than 6 fl. oz./A in total per year. If two applications are made, they must be made no closer than 14 days apart. The use of a crop oil concentrate (COC) type adjuvant at 1% v/v is recommended. Applications of AX-MESOTRIONE during dry weather conditions and/or temperatures above 85° can cause injury to Lowbush blueberries. Applications of AX-MESOTRIONE can cause yellowing or necrosis of leaves and under severe conditions, leaf drop may occur especially on "Sourtop" variety blueberries.

## CRANBERRY

AX-MESOTRIONE may be applied to bearing or non-bearing cranberry beds for control or suppression of bog St. John's wort (*Hypericum boreala*), rushes (*Juncus canadensis*, *J. effuses*, *J. bufonlus*, *J. tenuis*), sedges spp. (*Carex* spp.), yellow loosestrife (*Lysimachia terrestris*) and silverleaf (*Potentilla pacifica*) in addition to the weeds listed in Tables 1 and 2. AX-MESOTRIONE may be applied in cranberries at a rate up to 8 fl. oz./A. Apply no more than two applications per crop per year and not more than 16 fl. oz./A in total per year. If two applications are made, they must be made no closer than 14 days apart. The use of a crop oil concentrate (COC) type adjuvant at 1% v/v or non-ionic surfactant (NIS) at 0.25% v/v is recommended. Avoid using COC adjuvants that are injurious to cranberry leaves. In non-bearing cranberries, make the AX-MESOTRIONE application(s) after the bud break stage, but not less than 45 days before flooding in fall or winter. In bearing cranberries, make the AX-MESOTRIONE application(s) after the bud break stage, but not less than 45 days prior to flooding or harvest.

AX-MESOTRIONE may be applied through irrigation systems (chemigation) including center pivot or solid set.

## **Chemigation - Sprinkler Irrigation Application for Cranberry Only**

Check the irrigation system to ensure uniform application of water to all areas. Thorough coverage of foliage is required for good control. Good agitation in the pesticide supply tank should be maintained prior to and during the entire application period. Apply by injecting the recommended rate of AX-MESOTRIONE herbicide into the irrigation system using a metering device that will introduce a constant flow and by distributing the product to the target areas in 0.1-0.2 acre-inch of water. In general, use the least amount of water in this range required for proper distribution and coverage.

Once the application is completed, flush the entire irrigation and injection system with clean water before stopping the system. In addition to the above recommendations, if application is being made during a normal irrigation set of a stationary sprinkler, the recommended rate of AX-MESOTRIONE herbicide for the area covered should be injected into the system only during the end of the irrigation set for sufficient time to provide adequate coverage and product distribution.

## **Chemigation Use Precautions – Sprinkler Irrigation Application**

1. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
2. If you have any questions about calibration, you should contact State Extension Service Specialists, equipment manufacturers or other experts.

## **Chemigation Use Restrictions – Sprinkler Irrigation Application**

1. Apply this product only through sprinkler irrigation systems including center pivot or solid set. Do not apply this product through any other type of irrigation system.
2. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
3. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person shall shut the system down and make necessary adjustments should the need arise.
4. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back-flow.
5. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
6. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

7. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
8. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when pressure decreases to the point where pesticide distribution is adversely affected.
9. Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and are capable of being fitted with a system interlock
10. Any alternatives to the above required safety devices must conform to the list of EPA approved alternative devices.
11. Do not apply when wind speed favors drift beyond the area intended for treatment or nonuniform distribution of treated water.
12. Do not apply directly to water or areas where surface water is present outside the bog system.
13. Do not contaminate water when disposing of equipment wash water or rinsate.
14. Do not apply within 10 feet of surface water outside the bog system.
15. Do not spray to runoff.

## **FLAX**

AX-MESOTRIONE may be applied preemergence in flax, i.e. after planting but before crop emergence, at a rate up to 6 fl. oz./A. For a list of weeds controlled see Tables 1 and 2. Do not apply more than one application, and not more than 6 fl. oz./A, per crop or per year in flax. If weeds are emerged at the time of application, the use of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v is recommended. In addition, a spray grade UAN (e.g., 28-0-0) at the rate of 2.5% (v/v) or AMS at the rate of 8.5 lb./100 gals. of spray solution may be added to improve the burndown of existing weeds. Applications of AX-MESOTRIONE to emerged flax can result in severe crop injury.

## **OATS**

AX-MESOTRIONE can be applied preemergence or postemergence (but not both) for weed control in oats.

For preemergence control or partial control of the weeds listed in Table 2, apply AX-MESOTRIONE broadcast at a rate of 6.0 fl. oz./A prior to oat emergence. For best preemergence weed control, the AX-MESOTRIONE application must be made prior to weed emergence.

For postemergence (after oat emergence) control or partial control of the weeds listed in Table 1, apply AX-MESOTRIONE at a rate of 3.0 fl. oz./A. For best results, AX-MESOTRIONE must be applied to emerged weeds that are less than 5" tall. Postemergence applications of AX-MESOTRIONE may result in temporary injury of the oat crop. Injury symptoms may include leaf bleaching, leaf burn and in extreme conditions, stunting.

If emerged weeds are present at the time of the AX-MESOTRIONE application, the addition of a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v is recommended. In addition to COC or NIS, a spray grade UAN (e.g. 28-0-0) at the rate of 2.5% v/v or ammonium sulfate (AMS) at the rate of 8.5 lb./100 gallons of spray solution may be added for improved weed-control. If emerged weeds are not present at the time of the AX-MESOTRIONE application, no additives are recommended. If oat injury is a concern, eliminating the use of UAN or AMS will reduce the risk for postemergence crop injury. Additionally, the use of NIS instead of COC will also reduce the oat injury risk. However, weed control is also reduced if UAN or AMS is eliminated and when switching from COC to NIS.

Tank mixing other pesticides with AX-MESOTRIONE postemergence may increase the risk of injury. Avoid adding pesticides with emulsifiable concentrate (EC) type formulations to AX-MESOTRIONE for applications made postemergence to the crop.

### **Restrictions:**

1. Do not graze or feed forage from treated areas within 30 days following an application of AX-MESOTRIONE.
2. Do not harvest oats within 50 days following the application of AX-MESOTRIONE.
3. Do not make more than one application of AX-MESOTRIONE per year.
4. Do not apply AX-MESOTRIONE preemergence (prior to oat emergence) at more than 6.0 fl. oz./A/year.
5. Do not apply AX-MESOTRIONE postemergence at more than 3.0 fl. oz./A/year.
6. If the oat crop treated with AX-MESOTRIONE is lost or destroyed, oats may be replanted immediately. If AX-MESOTRIONE was applied to the lost oat crop, no additional AX-MESOTRIONE can be applied to the replanted oat crop.

### **OKRA**

AX-MESOTRIONE can be applied as a row-middle or a hooded post-direct treatment (but not both) for weed control in okra.

**Preemergence row-middle application:** Apply AX-MESOTRIONE at a rate of 6.0 fl. oz./A as a banded application to the row middles prior to weed emergence. For this banded application, leave one foot of untreated area over the okra row or 6" to each side of the planted row. For banded applications, the application must be made to account for band width, i.e. to deliver 6.0 fl. oz. per treated acre. Do not apply AX-MESOTRIONE directly over the planted okra row or severe crop injury may occur. Injury risk is greatest on coarse textured soils (sand, sandy loam or loamy sand).

**Postemergence hooded application:** Apply AX-MESOTRIONE at a rate of 3.0 fl. oz./A as a postemergence directed application using a hooded sprayer for control or partial control of the weeds listed in Table 1. Okra must be at least 3" tall at the time of this application. It is recommended that a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v be added to the spray solution. For postemergence hooded applications, the spray equipment must be set up to minimize the amount of AX-

MESOTRIONE that contacts the okra foliage or crop injury will occur. For best postemergence results, AX-MESOTRIONE must be applied to actively growing weeds.

**Restrictions:**

1. Do not harvest okra within 28 days following the application of AX-MESOTRIONE.
2. Do not make more than one application of AX-MESOTRIONE per okra crop.
3. Do not apply AX-MESOTRIONE as a row-middle application at more than 6.0 fl. oz. per treated acre per year.
4. Do not apply AX-MESOTRIONE as a post-directed application at more than 3.0 fl. oz. per acre per year.
5. Do not apply AX-MESOTRIONE as a broadcast preemergence or broadcast postemergence or broadcast postemergence application to okra or severe injury will occur.
6. If the okra crop treated with AX-MESOTRIONE is lost or destroyed, okra can be replanted only in the soil band that was not treated with AX-MESOTRIONE.
7. Postemergence –Okra must be at least 3” tall at the time of this application.

**PEARL MILLET**

AX-MESOTRIONE may be applied preemergence in pearl millet, i.e. after planting but before crop emergence, at a rate up to 6 fl. oz./A. For a list of weeds controlled see Table 2. Do not apply more than one application, and not more than 6 fl. oz./A per crop or per year in pearl millet. If weeds are emerged at the time of application, the use of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v is recommended. In addition, a spray grade UAN (e.g., 28-0-0) at the rate of 2.5% (v/v) or AMS at the rate of 8.5 lb./100 gals. of spray solution may be added to improve the burndown of existing weeds. Applications of AX-MESOTRIONE to emerged pearl millet can result in severe crop injury.

**RHUBARB**

AX-MESOTRIONE can be applied prior to crop emergence for weed control in established rhubarb.

Apply AX-MESOTRIONE at a rate of 6.0 fl. oz./A to dormant (prior to any spring green-up) rhubarb for control or partial control of the weeds listed in Table 2. If weeds are emerged at the time of application, it is recommended that a crop oil concentrate (COC) type adjuvant at 1% v/v or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v be added to the spray solution. Applications of AX-MESOTRIONE to rhubarb that is not dormant may result in a temporary bleaching symptomology. Rainfall or irrigation after the AX-MESOTRIONE application may increase the risk of injury to emerging rhubarb.

**Restrictions:**

1. Do not harvest rhubarb within 21 days following the application of AX-MESOTRIONE.

2. Do not make more than one application of AX-MESOTRIONE per year.
3. Do not apply AX-MESOTRIONE at more than 6.0 fl. oz./A/year.

### **SORGHUM (GRAIN AND SWEET)**

**Preemergence Application:** AX-MESOTRIONE can be applied preemergence or preplant non-incorporated up to 21 days before planting sorghum for control or partial control of the weeds listed in Table 2.

Apply AX-MESOTRIONE preemergence at a rate of 6.0-6.4 fl. oz./A as a broadcast non-incorporated application prior to sorghum emergence. Applying AX-MESOTRIONE less than 7 days before sorghum planting will increase the risk of crop injury, especially if irrigation or rainfall is received following the application. Injury symptoms include temporary bleaching of newly emerging sorghum leaves. Applying AX-MESOTRIONE more than 7 days (but not more than 21) prior to planting will reduce the risk of crop injury.

If AX-MESOTRIONE is applied prior to planting, minimize disturbance of the herbicide treated soil barrier during the planting process in order to lessen the potential for weed emergence.

If emerged weeds are present at the time of the preemergence application, it is recommended that a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v **or** a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v be added to the spray solution. In addition to COC or NIS, a spray grade UAN at a rate of 2.5% v/v **or** ammonium sulfate (AMS) at a rate of 8.5 lb./100 gallons of spray solution can be added to the spray solution.

#### **Preemergence Application Restrictions:**

1. Do not apply more than 6.4 fl. oz./A of AX-MESOTRIONE per year.
2. Do not apply AX-MESOTRIONE to emerged sorghum or severe crop injury may occur.
3. Do not use AX-MESOTRIONE in the production of forage sorghum, sudangrass, sorghum sudangrass hybrids, or dual purpose sorghum.
4. Do not apply AX-MESOTRIONE to sorghum that is grown on coarse textured soils (e.g. sandy loam, loamy sand, sand).
5. In the State of Texas, do not apply AX-MESOTRIONE to sorghum grown south of Interstate 20 (I-20) or east of Highway 277.

**Post-Directed:** AX-MESOTRIONE can be applied post-directed to grain sorghum for control or partial control of the weeds listed in Table 1. For best results, apply AX-MESOTRIONE to actively growing weeds.

Apply AX-MESOTRIONE at a rate of 3 fl. oz./A as a post-directed application when the grain sorghum is a minimum of 8 inches tall. Make the application by directing the spray between the crop rows and towards the base of the grain sorghum plant. Direct application of AX-MESOTRIONE onto grain sorghum foliage can result in crop injury including temporary bleaching. If crop injury does occur, newly emerging leaves following application are typically unaffected.

It is recommended that a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v **or** a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v be added to the spray solution. In addition to COC or NIS, a spray grade Urea Ammonium Nitrate (UAN) at a rate of 2.5% v/v **or** ammonium sulfate (AMS) at a rate of 8.5 lb./100 gallons of spray solution can be added to the spray solution.

AX-MESOTRIONE may be tank mixed with other herbicides registered for grain sorghum for improved spectrum of weed control. Additionally, these tank mixtures can be used to include a herbicide with a different mode of action to help control or manage the development of resistant weed biotypes.

#### **Post-Directed Restrictions:**

1. Do not apply more than one post-directed application of AX-MESOTRIONE .
2. Do not apply more than 3.0 fl. oz./A of AX-MESOTRIONE post-directed when the grain sorghum is a minimum of 8 inches tall. Not more than 6.4 fl. oz./A of AX-MESOTRIONE per grain sorghum crop year.
3. Do not apply AX-MESOTRIONE broadcast over-the-top to emerged sorghum or severe crop injury may occur.
4. Do not harvest grain sorghum for forage for 30 days following application.
5. Do not harvest for grain or stover for 60 days following application.
6. Do not apply AX-MESOTRIONE after the sorghum seed head has begun to emerge.
7. Do not use AX-MESOTRIONE in the production of forage sorghum, sudangrass, or sorghum-sudangrass hybrids.

#### **SOYBEAN**

AX-MESOTRIONE can be applied preemergence to soybeans that are identified as mesotrione tolerant. Applications to soybeans that are not mesotrione tolerant will result in significant crop injury. For a list of mesotrione tolerant soybean varieties, contact a Axion Technical Representative.

**Preemergence Application:** For preemergence control of the weeds listed in Table 2, apply AX-MESOTRIONE prior to soybean emergence at a rate of 6.0 fl. oz./A. Apply the higher rate for longer residual control. AX-MESOTRIONE may be tank mixed with other registered soybean herbicides such as Dual Magnum®, Dual II Magnum, and Prefix®. Refer to the tank mix partner label and follow all precautions and restrictions.

If weeds are emerged at the time of application, add either a non-ionic surfactant (NIS) at 1 qt./100 gallons (0.25% v/v) or a crop oil concentrate (COC) at 1 gallon/100 gallons (1% v/v). In addition to NIS or COC, it is also recommended to add either ammonium sulfate (AMS) at 8.5-17 lbs./100 gallon (or equivalent).

#### **Restrictions:**

1. Apply no more than 6.0 fl. oz./A per soybean crop per year.
2. Do not apply AX-MESOTRIONE to emerged soybeans.
3. Do not graze or feed soybean forage or hay to livestock.

## SUGARCANE

AX-MESOTRIONE can be applied by ground for preemergence, postemergence over-the-top or postemergence directed weed control in sugarcane.

AX-MESOTRIONE may also be applied aerially for preemergence or postemergence weed control only in the following states: Florida, Louisiana and Texas.

**Preemergence Applications:** Apply AX-MESOTRIONE for preemergence weed control at 6.0-7.7 fl. oz./A after the planting of plant-cane or after harvest of ratoon-cane. For a list of weeds controlled preemergence, refer to Table 2. If some weeds are already emerged at the time of application, add a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v to the spray solution. In addition to COC or NIS, a spray grade UAN at a rate of 2.5% v/v or ammonium sulfate (AMS) at a rate of 8.5 lb./100 gallons of spray solution can be added to the spray solution. For improved preemergence weed control, AAtrex or Evik® can be tank mixed with AX-MESOTRIONE. Refer to the tank mix partner label for specific rates and use directions.

**Postemergence Applications:** Apply AX-MESOTRIONE postemergence at 3.0 fl. oz./A for control of the weeds listed in Table 1. Postemergence applications may be made as a post-over-the-top or as a post-directed spray to the base of the sugarcane. If a preemergence application was made earlier in the season, only one postemergence application can be made. If no preemergence application was made earlier in the season, both a post-over-the-top and a post-directed application can be made. For best results, AX-MESOTRIONE must be applied to actively growing weeds.

For postemergence applications, it is recommended that a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v or a nonionic surfactant (NIS) type adjuvant be added to the spray solution. In addition to COC or NIS, the use of a spray grade UAN (e.g. 28-0-0) at 2.5% v/v or ammonium sulfate (AMS) at a rate of 8.5 lb./100 gallons of spray solution can be added for improved control of weeds.

For additional postemergence weed control, AX-MESOTRIONE can be tank mixed with atrazine, Asulox® and/or Envoke®. Refer to the tank mix product labels for specific rates and use directions.

### Restrictions:

1. Do not apply more than 7.7 fl. oz./A of AX-MESOTRIONE as a preemergence application.
2. Do not apply more than 3.0 fl. oz./A of AX-MESOTRIONE in a postemergence application.
3. Do not make more than two applications of AX-MESOTRIONE per year. If a preemergence application of AX-MESOTRIONE is made, only one postemergence application is allowed.
4. Do not make two AX-MESOTRIONE applications less than 14 days apart.
5. Do not apply more than 10.7 fl. oz./A of AX-MESOTRIONE per year.

6. Do not harvest sugarcane within 114 days following a post-over-the-top application of AX-MESOTRIONE (114 day PHI).
7. Do not harvest sugarcane within 100 days following a post-directed application of AX-MESOTRIONE (100 day PHI).

### **STORAGE AND DISPOSAL**

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

#### **Pesticide Storage**

Keep container tightly closed when not in use. Do not store near seed, fertilizers, or foodstuffs. Can be stored at temperatures as low as -20°F. Keep away from heat and flame.

#### **Pesticide Disposal**

Open dumping is prohibited. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

#### **Container Handling [Less Than or Equal to 5 Gallons]**

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

#### **Container Handling [Greater Than 5 Gallons]**

Refillable container. Refill this container with pesticide only. Do not use 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 person refilling. To clean 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

### **CONDITIONS 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 product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or

application, weather, presence of other materials or other influencing factors in the use of the product, which are beyond the control of AXION AG PRODUCTS LLC or Seller, TO THE EXTENT CONSISTENT WITH APPLICABLE LAW All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold AXION AG PRODUCTS LLC and Seller harmless for any claims relating to such factors.

AXION AG PRODUCTS LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or AXION AG PRODUCTS LLC, and TO THE EXTENT CONSISTENT WITH APPLICABLE LAW Buyer and User assume the risk of any such use. AXION AG PRODUCTS LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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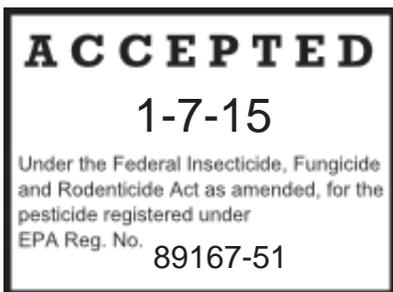
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## SUPPLEMENTAL LABELING

GROUP	27	HERBICIDE
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### AX-MESOTRIONE®

This supplemental label expires on October 30, 2016 and must not be used or distributed after this date.

**Active Ingredient:**

Mesotrione (CAS No. 104206-82-8): .....	40.0%
Other Ingredients: .....	60.0%
Total: .....	100.0%

Contains 4 lbs. of active ingredient mesotrione per gallon.

**KEEP OUT OF REACH OF CHILDREN.**

## CAUTION

EPA Reg. No. 89167-XX

All applicable directions, restrictions and precautions on the EPA-registered label are to be followed.

Before using AX-MESOTRIONE as permitted according to this supplemental labeling, read and follow all applicable directions, restrictions, and precautions on the EPA registered label on or attached to the pesticide product container. This Supplemental Labeling contains revised use instructions and or restrictions that may be different from those that appear on the container label. This Supplemental Labeling must be in the possession of the user at the time of pesticide application. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

## DIRECTIONS FOR USE

### ADDITIONAL SPRAY DRIFT RESTRICTIONS FOR AERIAL APPLICATIONS

The distance of the outer-most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.

Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they must be observed.

Spray must be released at the lowest height consistent with effective weed control and flight safety.

For best results, each specific aerial application vehicle used should be quantifiably pattern tested for aerial application of AX-MESOTRIONE initially and every year thereafter.

**RESTRICTION: For aerial application use only nozzles producing coarse-ultra coarse droplets. Do not use nozzles producing fine-medium size droplets.**

For some use patterns, reducing the effective boom length to less than  $\frac{1}{2}$  of the wingspan or rotor length may further-reduce drift without reducing swath width.

Applications must not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

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

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect drift.

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

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

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

## APPLICATION INFORMATION

### Aerial Application

**RESTRICTION:** AX-MESOTRIONE can be applied aerially only to corn and sugarcane.

**RESTRICTION:** For aerial application use only nozzles producing coarse-ultra coarse droplets. Do not use nozzles producing fine-medium size droplets.

AX-MESOTRIONE may be applied aerially for preemergence or postemergence weed control in corn only in the following states: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Nebraska, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

AX-MESOTRIONE may be applied aerially for preemergence or postemergence weed control in sugarcane only in the following states: Florida, Louisiana and Texas.

Applications must be made in a minimum of 2 gallons of water per acre.

### BLUEGRASS, RYEGRASS (ANNUAL AND PERENNIAL) AND TALL FESCUE GROWN FOR SEED

AX-MESOTRIONE can be applied to bluegrass, annual ryegrass, perennial ryegrass, or tall fescue which is grown for seed. AX-MESOTRIONE can be applied as a preemergence application to bare soil (new seeding) or as a postemergence application to an emerged grass crop.

**Preemergence Application:** Apply AX-MESOTRIONE as a broadcast, surface spray at a rate of 6.0 fl. oz./A to a newly seeded crop. The AX-MESOTRIONE application must be made prior to crop and weed emergence. Rainfall or irrigation as the newly seeded grass crop emerges from the soil may increase the risk of injury from AX-MESOTRIONE. Grass crop injury symptoms include temporary bleaching of newly emerged leaves, or in extreme conditions, stunting. For a list of preemergence weeds controlled or partially controlled see Table 2. In addition to the weeds listed in Table 2, AX-MESOTRIONE applied preemergence will control mannagrass.

**Postemergence Application:** Apply AX-MESOTRIONE as a broadcast postemergence spray at a rate of 3.0-6.0 fl. oz./A to emerged bluegrass, perennial ryegrass or tall fescue grown for seed. Use the 3.0 fl. oz./A rate for postemergence control or partial control of the weeds listed in Table 1. In addition to the weeds listed in Table 2, AX-MESOTRIONE applied postemergence will control mannagrass (up to 3 tillers).

Use the 6.0 fl. oz./A rate for postemergence weed control plus extended residual weed control (see Table 2). The addition of a crop oil concentrate type adjuvant at 1% v/v or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v is recommended.

Postemergence applications of AX-MESOTRIONE may result in temporary bleaching of the grass crop.

In addition to COC or NIS, a spray grade UAN (e.g. 28-0-0) at the rate of 2.5% v/v or ammonium sulfate (AMS) at the rate of 8.5 lb./100 gallons of spray solution may also be added for improved control of emerged weeds. The addition of UAN or AMS will improve consistency of postemergence weed control but will also increase the risk of grass crop injury, especially at AX-MESOTRIONE rates greater than 3.0 fl. oz./A. If grass crop injury is a concern, do not add UAN or AMS to the spray solution.

Tank mixing other pesticides with AX-MESOTRIONE postemergence may increase the risk of crop injury. Avoid adding pesticides with emulsifiable concentrate (EC) type formulations to AX-MESOTRIONE for applications made postemergence to the crop.

### **Restrictions:**

1. Do not harvest the grass crop for seed or straw within 60 days following the application of AX-MESOTRIONE.
2. Do not graze or feed forage from treated areas within 14 days following harvest of seed or straw and at least 74 days after application of AX-MESOTRIONE.
3. Do not make more than two applications of AX-MESOTRIONE per year.
4. Do not apply more than 6 fl. oz./A in a single application and not more than 9 fl. oz./A of AX-MESOTRIONE per year.
5. Applications of AX-MESOTRIONE to grasses grown for seed species not listed on this label may result in severe injury.

### **BUSH AND CANEBERRIES (CROP GROUP 13-07A and 13-07B)**

**Note:** Not all cultivars and types of berries that are included within the Environmental Protection Agencies definition of bush and caneberreries (Crop Subgroups 13-07A and 13-07B) have been tested and shown to have adequate crop safety to AX-MESOTRIONE Herbicide. Those that have been tested, and are believed to be reasonably fit, are listed below along with use directions for that crop. If AX-MESOTRIONE is used on bush or caneberreries not listed below, severe crop injury may occur.

AX-MESOTRIONE may be applied as a pre-bloom post-directed spray in high bush blueberry, lingonberry, red currant, black currant, black raspberry, red raspberry, and blackberry. For a list of weeds controlled see Tables 1 and 2. AX-MESOTRIONE may be applied in bush or caneberreries at a rate up to 6 fl. oz./A. If a split application weed control program is desired, 3 fl. oz./A followed by 3 fl. oz./A may be used, but no more than two applications per crop per year are allowed and not more than 6 fl. oz./A in total per year. If two applications are made, they must be made no closer than 14 days apart. The use of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v is recommended, but avoid using COC adjuvants that are injurious to bush or caneberry leaves. Do not apply AX-MESOTRIONE to bush or caneberreries after the onset of the bloom stage or illegal residues may occur.

In low bush blueberries, AX-MESOTRIONE may only be applied in the non-bearing year. This application may be a broadcast application. Up to 6 fl. oz./A of AX-MESOTRIONE may be applied in a single application, or 3 fl. oz./A followed by 3 fl. oz./A if used in a split application program. No more than two applications per year are allowed and not more than 6 fl. oz./A in total per year. If two applications are made, they must be made

no closer than 14 days apart. The use of a crop oil concentrate (COC) type adjuvant at 1% v/v is recommended. Applications of AX-MESOTRIONE during dry weather conditions and/or temperatures above 85° can cause injury to Lowbush blueberries. Applications of AX-MESOTRIONE can cause yellowing or necrosis of leaves and under severe conditions, leaf drop may occur especially on "Sourtop" variety blueberries.

## **CRANBERRY**

AX-MESOTRIONE may be applied to bearing or non-bearing cranberry beds for control or suppression of bog St. John's wort (*Hypericum boreala*), rushes (*Juncus canadensis*, *J. effuses*, *J. bufonlus*, *J. tenuis*), sedges spp. (*Carex* spp.), yellow loosestrife (*Lysimachia terrestris*) and silverleaf (*Potentilla pacifica*) in addition to the weeds listed in Tables 1 and 2. AX-MESOTRIONE may be applied in cranberries at a rate up to 8 fl. oz./A. Apply no more than two applications per crop per year and not more than 16 fl. oz./A in total per year. If two applications are made, they must be made no closer than 14 days apart. The use of a crop oil concentrate (COC) type adjuvant at 1% v/v or non-ionic surfactant (NIS) at 0.25% v/v is recommended. Avoid using COC adjuvants that are injurious to cranberry leaves. In non-bearing cranberries, make the AX-MESOTRIONE application(s) after the bud break stage, but not less than 45 days before flooding in fall or winter. In bearing cranberries, make the AX-MESOTRIONE application(s) after the bud break stage, but not less than 45 days prior to flooding or harvest.

AX-MESOTRIONE may be applied through irrigation systems (chemigation) including center pivot or solid set.

### **Chemigation - Sprinkler Irrigation Application for Cranberry Only**

Check the irrigation system to ensure uniform application of water to all areas. Thorough coverage of foliage is required for good control. Good agitation in the pesticide supply tank should be maintained prior to and during the entire application period. Apply by injecting the recommended rate of AX-MESOTRIONE herbicide into the irrigation system using a metering device that will introduce a constant flow and by distributing the product to the target areas in 0.1-0.2 acre-inch of water. In general, use the least amount of water in this range required for proper distribution and coverage.

Once the application is completed, flush the entire irrigation and injection system with clean water before stopping the system. In addition to the above recommendations, if application is being made during a normal irrigation set of a stationary sprinkler, the recommended rate of AX-MESOTRIONE herbicide for the area covered should be injected into the system only during the end of the irrigation set for sufficient time to provide adequate coverage and product distribution.

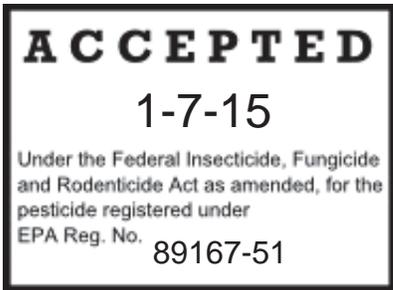
### **Chemigation Use Precautions - Sprinkler Irrigation Application**

1. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
2. If you have any questions about calibration, you should contact State Extension Service Specialists, equipment manufacturers or other experts.

### **Chemigation Use Restrictions - Sprinkler Irrigation Application**

1. Apply this product only through sprinkler irrigation systems including center pivot or solid set. Do not apply this product through any other type of irrigation system.

2. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
3. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person shall shut the system down and make necessary adjustments should the need arise.
4. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back-flow.
5. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
6. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
7. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
8. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when pressure decreases to the point where pesticide distribution is adversely affected.
9. Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and are capable of being fitted with a system interlock.
10. Any alternatives to the above required safety devices must conform to the list of EPA approved alternative devices.
11. Do not apply when wind speed favors drift beyond the area intended for treatment or nonuniform distribution of treated water.
12. Do not apply directly to water or areas where surface water is present outside the bog system.
13. Do not contaminate water when disposing of equipment wash water or rinsate.
14. Do not apply within 10 feet of surface water outside the bog system.
15. Do not spray to runoff.



**SUPPLEMENTAL LABELING**

GROUP 27 HERBICIDE

**AX-MESOTRIONE**

**This supplemental label expires on October 30, 2016 and must not be used or distributed after this date.**

Active Ingredient	
Mesotrione (CAS No. 104206-82-8):	40.0%
Other Ingredients:	60.0%
Total:	100.0%

Contains 4 lbs. of active ingredient mesotrione per gallon.

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

EPA Reg. No. 89167-xx

**All applicable directions, restrictions and precautions on the EPA-registered label are to be followed.**

**Before using AX-MESOTRIONE as permitted according to this supplemental labeling, read and follow all applicable directions, restrictions, and precautions on the EPA registered label on or attached to the pesticide product container. This Supplemental Labeling contains revised use instructions and or restrictions that may be different from those that appear on the container label. This Supplemental Labeling must be in the possession of the user at the time of pesticide application. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.**

## DIRECTIONS FOR USE

### SORGHUM (GRAIN AND SWEET)

**Preemergence Application:** AX-MESOTRIONE can be applied preemergence or preplant non-incorporated up to 21 days before planting sorghum for control or partial control of the weeds listed in Table 2.

Apply AX-MESOTRIONE preemergence at a rate of 6.0-6.4 fl. oz./A as a broadcast non-incorporated application prior to sorghum emergence. Applying AX-MESOTRIONE less than 7 days before sorghum planting will increase the risk of crop injury, especially if irrigation or rainfall is received following the application. Injury symptoms include temporary bleaching of newly emerging sorghum leaves. Applying AX-MESOTRIONE more than 7 days (but not more than 21) prior to planting will reduce the risk of crop injury.

If AX-MESOTRIONE is applied prior to planting, minimize disturbance of the herbicide treated soil barrier during the planting process in order to lessen the potential for weed emergence.

If emerged weeds are present at the time of the preemergence application, it is recommended that a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v or a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v be added to the spray solution. In addition to COC or NIS, a spray grade UAN at a rate of 2.5% v/v or ammonium sulfate (AMS) at a rate of 8.5 lb./100 gallons of spray solution can be added to the spray solution.

#### **Preemergence Application Restrictions:**

1. Do not apply more than 6.4 fl. oz./A of AX-MESOTRIONE per year.
2. Do not apply AX-MESOTRIONE to emerged sorghum or severe crop injury may occur.
3. Do not use AX-MESOTRIONE in the production of forage sorghum, sudangrass, sorghum sudangrass hybrids, or dual purpose sorghum.
4. Do not apply AX-MESOTRIONE to sorghum that is grown on coarse textured soils (e.g. sandy loam, loamy sand, sand).
5. In the State of Texas, do not apply AX-MESOTRIONE to sorghum grown south of Interstate 20 (I-20) or east of Highway 277.

**Post-Directed:** AX-MESOTRIONE can be applied post-directed to grain sorghum for control or partial control of the weeds listed in Table 1. For best results, apply AX-MESOTRIONE to actively growing weeds.

Apply AX-MESOTRIONE at a rate of 3 fl. oz./A as a post-directed application when the grain sorghum is a minimum of 8 inches tall. Make the application by directing the spray between the crop rows and towards the base of the grain sorghum plant. Direct application of AX-MESOTRIONE onto grain sorghum foliage can result in crop injury including temporary bleaching. If crop injury does occur, newly emerging leaves following application are typically unaffected.

It is recommended that a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v or a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v be added to the spray solution. In addition to COC or NIS, a spray grade Urea Ammonium Nitrate (UAN) at a rate of 2.5% v/v or ammonium sulfate (AMS) at a rate of 8.5 lb./100 gallons of spray solution can be added to the spray solution.

AX-MESOTRIONE may be tank mixed with other herbicides registered for grain sorghum for improved spectrum of weed control. Additionally, these tank mixtures can be used to include a herbicide with a different mode of action to help control or manage the development of resistant weed biotypes.

**Post-Directed Restrictions:**

1. Do not apply more than one post-directed application of AX-MESOTRIONE.
2. Do not apply more than 3.0 fl. oz./A of AX-MESOTRIONE post-directed and not more than 6.4 fl. oz./A of AX-MESOTRIONE per grain sorghum crop year.
3. Do not apply AX-MESOTRIONE broadcast over-the-top to emerged sorghum or severe crop injury may occur.
4. Do not harvest grain sorghum for forage for 30 days following application.
5. Do not harvest for grain or stover for 60 days following application.
6. Do not apply AX-MESOTRIONE after the sorghum seed head has begun to emerge.
7. Do not use AX-MESOTRIONE in the production of forage sorghum, sudangrass, or sorghum-sudangrass hybrids.