



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

January 30, 2017

Mary Beth Endres
Registration manager
Liberty Crop Protection, LLC
4850 Hahns Peak Drive, Suite 200
Loveland, CO 80538

Subject: Label Amendment – Adding cranberry and sorghum, minor label updates
Product Name: Liberty Mesotrione 4SC
EPA Registration Number: 89168-54
Application Date: 01/09/2017
Decision Number: 525015

Dear Ms. Endres:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

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.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance

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with FIFRA section 6. If you have any questions, please contact Lisa Pabel by phone at (703) 347-0459, or via email at pabel.lisa@epa.gov.

Sincerely,

A handwritten signature in cursive script, appearing to read "Erik Kraft".

Erik Kraft, Acting Product Manager 24
Fungicide and Herbicide Branch
Registration Division (7505P)
Office of Pesticide Programs

Enclosure



Group	27	Herbicide
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Liberty Mesotrione 4SC

Controls annual broadleaf weeds in Corn (field, seed, yellow pop, sweet), Cranberry, Sorghum (Grain and Sweet), and Sugarcane

ACTIVE INGREDIENT:	% BY WT.
Mesotrione: 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione	40.0%
OTHER INGREDIENTS:	<u>60.0%</u>
TOTAL:	100.0%

Contains 4 lbs. Mesotrione per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE INSIDE BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

FIRST AID	
IF IN EYES	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
IF ON SKIN	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF INHALED	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
IF SWALLOWED	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything to an unconscious person.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
HOT LINE NUMBER	
For 24-Hour Medical Emergency Assistance (Human or Animal) call: 1-800-222-1222 . For Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) call CHEMTREC: 1-800-424-9300 .	

EPA Reg. No.: 89168-54

EPA Est. No.: _____

Net Contents: _____ Gal (_____ L)

Manufactured By [For]:
 Liberty Crop Protection, LLC
 4850 Hahns Peak Drive, Suite 200
 Loveland, CO 80538

012717

**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 Protection Equipment (PPE)

Applicators and Other Handlers must wear:

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

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

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

Engineering Control 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.

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 or 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 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

PRODUCT INFORMATION

Liberty Mesotrione 4SC is a systemic pre-emergence and post-emergence herbicide for selective contact and residual control of broadleaf weeds in field corn, seed corn, yellow popcorn, sweet corn cranberry, sorghum (grain and sweet), and sugarcane. If used pre-emergence, weeds take up the product through the soil during emergence. Dry weather conditions can reduce pre-emergent effectiveness of **Liberty Mesotrione 4SC**. If at least 1/4-inch of rainfall does not occur within 7-10 days of application, rotary hoeing is recommended to activate the product. If used post-emergence, vulnerable weeds take up the product through treated foliage and stop growing soon after application. It may take up to two weeks for weeds to die. **Liberty Mesotrione 4SC** is absorbed by soil and/or through foliage of emerged weeds.

Liberty Mesotrione 4SC will not control most species of grass weeds. **Liberty Mesotrione 4SC** can be tank-mixed with other herbicides registered to control grass weeds (see tank-mix information in this label for additional information). **Liberty Mesotrione 4SC** can be used in combination with a burndown herbicide prior to planting to provide weed control in field corn, seed corn, yellow popcorn, and sweet corn.

RESISTANCE MANAGEMENT FOR LIBERTY MESOTRIONE 4SC (GROUP 27 HERBICIDE)

The efficacy of **Liberty Mesotrione 4SC** is not affected by the presence of biotype weed species that are resistant to Protoporphyrinogen Oxidase (PPO), 4-Hydroxyphenylpyruvate Dioxygenase (HPPD) or Acetolactate Synthase (ALS) inhibiting herbicides or to Triazine or Glyphosate herbicides.

To reduce the risk of weeds developing resistance to mesotrione in corn, always use full specified label rates. When applying **Liberty Mesotrione 4SC** post-emergence after a mesotrione-containing pre-emergence herbicide, always add atrazine as a tank mix partner. Do not apply more than 0.24 lb. of mesotrione active ingredient per acre of corn per year (equivalent to 7.7 fl. oz. per acre per year of **Liberty Mesotrione 4SC**). If additional herbicide is needed, use an herbicide product other than a HPPD inhibitor (Group 27 Herbicide). Use full label rates of **Liberty Mesotrione 4SC** to prevent selection for, or population shifts toward, marginally tolerant weed species and/or species biotypes.

INTEGRATED WEED PEST MANAGEMENT

Integrate **Liberty Mesotrione 4SC** into an overall weed pest management strategy whenever the use of an herbicide is required. Practices known to reduce weed development (tillage, crop competition) and herbicide use (weed scouting, proper application timing, banding) should be followed wherever possible. Consult local agricultural and weed authorities for additional IPM strategies established for your area.

USE PRECAUTIONS - LIBERTY MESOTRIONE 4SC

- Severe corn injury can result from post-emergent application of **Liberty Mesotrione 4SC** to corn treated with chlorpyrifos or terbufos.
- Severe corn injury and/or yield loss can occur if foliar post-emergent applications of **Liberty Mesotrione 4SC** are made to corn in a tank mix with any organophosphate or carbamate insecticide.
- Severe corn injury and/or yield loss can occur if an organophosphate or carbamate insecticide is applied foliar post-emergence within 7 days before or 7 days after **Liberty Mesotrione 4SC** application.
- 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 **Liberty Mesotrione 4SC** is made following label directions when weeds are actively growing.
- **Liberty Mesotrione 4SC** may be applied with pyrethroid type insecticides (e.g., Lambda cyhalothrin).
- When applied post-emergence in a tank mix with emulsifiable concentrate grass herbicides crop injury can occur.

USE RESTRICTIONS - LIBERTY MESOTRIONE 4SC

- Do not apply this product to white popcorn or ornamental (Indian) corn.
- Do not cultivate corn within 7 days before or after application of this product as weed control may be reduced.
- Do not apply this product through any type of irrigation system unless specified under the specific crop section of the label.
- Do not apply this product with suspension fertilizers as the carrier.
- Do not make aerial applications of this product unless specified in the specific crop directions of this label.

SPRAY DRIFT RESTRICTIONS

- Avoid drift to adjacent crops and non-target areas.
- For aerial applications use only nozzles that produce coarse to very coarse droplets. Do not use nozzles that produce fine to medium size droplets.
- Do not apply when weather conditions can cause drift to non-target areas to avoid injury to adjacent crops and vegetation.
- Do not apply when wind speed is greater than 10 mph or during a temperature inversion.
- Use of larger droplet sizes will help avoid spray drift.

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

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

Importance of Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but may not prevent drift if applications are made improperly or under unfavorable environmental conditions. See 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** - Use the lower spray pressures specified for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use a higher-rated nozzle instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.

Sensitive Areas

Apply **Liberty Mesotrione 4SC** 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 sensitive areas).

SPRAY DRIFT DIRECTIONS FOR AERIAL APPLICATION TO CORN & SUGARCANE ONLY

The distance of the outer-most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.

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

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

For best results with aerial application of this product, each type of airplane and helicopter used should be quantifiably pattern tested initially and every year thereafter.

RESTRICTION: FOR AERIAL APPLICATION USE ONLY NOZZLES PRODUCING COARSE TO VERY COARSE DROPLETS. DO NOT USE NOZZLES PRODUCING FINE OR MEDIUM SIZE DROPLETS.

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Do not make applications 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 must be avoided below 2 mph due to variable wind direction and high inversion potential.

NOTE: Local terrain can influence wind patterns. Every applicator needs to be familiar with local wind patterns and how they affect drift.

When making application 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.

Do not make applications 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.

Apply **Liberty Mesotrione 4SC** 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).

AERIAL APPLICATION INSTRUCTIONS FOR CORN AND SUGARCANE

Aerial application of Liberty Mesotrione 4SC is permitted only on corn and sugarcane. Make aerial application with nozzles that produce coarse to very coarse droplets. Do not use nozzles producing fine to medium size droplets.

CORN: **Liberty Mesotrione 4SC** is approved for aerial application for pre-emergence and post-emergence control in corn in the states of: **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.**

SUGARCANE: **Liberty Mesotrione 4SC** is approved for aerial application for pre-emergence and post-emergence control in sugarcane in the states of: **Florida, Louisiana, and Texas.**

Make aerial applications in a minimum of 2 gallons water per acre.

PRE-EMERGENCE GROUND APPLICATION INSTRUCTIONS

Apply **Liberty Mesotrione 4SC** pre-emergence with a carrier volume of 10-60 gals./A.

Space spray nozzles of the same size and type uniformly to provide accurate and uniform coverage. Use medium to coarse droplet size nozzles to ensure coverage and avoid drift. Apply in a spray volume of 10-

60 gals./A with water or liquid fertilizer (NOT suspension fertilizer) as the carrier. Use a pump that will maintain pump pressure of 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures can be used with extended range or drift reduction nozzles.

Maintain constant agitation until spraying is complete, even if stopping for brief periods of time. If agitation is stopped for longer than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying.

POST-EMERGENCE GROUND APPLICATION INSTRUCTIONS

Space spray nozzles of the same size and type uniformly to provide accurate and uniform coverage. Use medium to coarse droplet size nozzles to ensure coverage and avoid drift. Complete 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 with water as the carrier. Use a pump that will maintain pump pressure of 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures can be used with extended range or drift reduction nozzles. If weed foliage is dense, use a minimum of 20 gals.

Apply with flat fan nozzles of 80 degrees or 100 degrees for optimum post-emergent coverage. Do not use flood jet nozzles or controlled droplet application equipment for post-emergence applications.

Angle nozzles forward 45° to enhance product penetration and provide better coverage. In-line strainers and nozzle screens must be a minimum of 50-mesh or coarser.

Maintain constant agitation until spraying is complete, even if stopping for brief periods of time. If agitation is stopped for longer than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying.

USE DIRECTIONS WITH SPRAY ADDITIVES

Post-Emergence Adjuvants

The following recommendations are mainly for use in corn. For other crops refer to the specific crop use directions.

Adjuvant Use in Post-Emergence applications to Field and Seed Corn

After corn has emerged, add 1.0 gal./100 gals. of water (1.0% v/v) Crop Oil Concentrate (COC) to the spray solution. 1 qt./100 gals. of water (0.25% v/v) of a non-ionic surfactant (NIS) or Crop Oil Replacement product can be used, but better weed control is achieved with the use of a COC compared to NIS.

In addition to COC, add 2.5% (v/v) a spray grade UAN (e.g., 28-0-0) to the spray solution, or 8.5 lbs./100 gallons of ammonium sulfate (AMS), except if precluded elsewhere on this label or a state-specific supplemental label.

Restrictions: Do not use methylated seed oil (MSO) or MSO adjuvant blends for post-emergence applications of **Liberty Mesotrione 4SC** or severe crop injury can occur. Do not use MSO adjuvants unless it is specifically permitted in the **Tank Mixtures for Corn** section of this label, or if permitted by a state-specific supplemental label.

Adjuvant Use Post-Emergence to Sweet and Yellow Corn

Restriction: Do not use UAN or AMS on sweet and yellow corn as severe crop injury can occur.

Use a NIS instead of a COC to reduce the likelihood of crop injury. COCs will maximize weed control under dry growing conditions, but will significantly injure crops under lush growing conditions. To optimize weed control, add atrazine wherever rotational or local atrazine restrictions allow.

Pre-Emergence Adjuvant Use

Any adjuvant approved for use on agriculture is permitted when making **Liberty Mesotrione 4SC** pre-plant or pre-emergence applications. MSO adjuvants perform better than COC and NIS adjuvants under pre-plant/pre-emergence conditions. UAN and AMS adjuvants will provide better weed control than not using any adjuvant. If **Liberty Mesotrione 4SC** is being tank-mixed with another registered herbicide, refer to the tank mix partner label for adjuvant precautions and restrictions.

SPRAY EQUIPMENT CLEANING

It is important to follow the procedures below for cleaning equipment before spraying a crop other than corn. Mix only as much spray solution as is needed.

- 1) Flush tank, hoses, boom, and nozzles with clean water.
- 2) Prepare cleaning solution of 1 gal. of household ammonia per 25 gals. of water. Commercial spray tank cleaners can be used in lieu of ammonia/water solution.
- 3) Using a pressure washer, clean the inside of the spray tank with the cleaning solution. Wash ALL parts of the tank, including the inside top surface. If a pressure washer is not available, 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 spray and recirculate the cleaning solution for a minimum of 15 minutes. All visible deposits of spray solution must be removed from the spray tank before making any other applications.
- 4) Flush hoses, spray lines, and nozzles with cleaning solution for a minimum of 1 minute.
- 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 previous steps.
- 8) Rinse the complete spray system with clean water.

MIXING INSTRUCTIONS

See the **Crop Use Directions** sections of the label for specific tank mix instructions.

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 label limitations and precautions.

MIXING RESTRICTIONS

- Do not exceed any dosage rates specified on labels.
- Do not mix this product with any product containing a label prohibition against such mixing.
- Do not tank mix **Liberty Mesotrione 4SC** with any other insecticide, fungicide, fertilizer, or adjuvant not specified on this label without first testing compatibility, as poor mixing can occur. Test compatibility on a small scale (such as a jar test) before actual tank mixing.

MIXING PROCEDURE

1. Use sprayers in good operating condition with good agitation. Ensure that the sprayer is cleaned according to the label instructions of the product label used prior to **Liberty Mesotrione 4SC**. For post-emergence applications, use clean water only for the spray solution. Ensure that all in-line strainers and nozzle screens in the sprayer are 50-mesh or coarser. DO NOT use screens finer than 50-mesh.
2. Use liquid fertilizer (NOT suspension fertilizer) as the carrier for pre-emergence applications.
3. Start filling spray tank or pre-mix tank with clean water and begin agitation. Maintain constant agitation.
4. When sprayer or pre-mix is half full of water, add AMS, maintaining agitation until dispersed.
5. Add **Liberty Mesotrione 4SC** slowly and agitate until completely dissolved. Wait at least 1 minute after the last of the **Liberty Mesotrione 4SC** has been added to allow for complete dispersion. If using cold water, a longer agitation period may be required to ensure adequate dispersing.
6. If tank mixing, add the tank mix product.
7. Add the adjuvant and UAN, if needed, and continue to fill tank to desired level with water.

LIBERTY MESOTRIONE 4SC WEED CONTROL TABLES

Liberty Mesotrione 4SC applied as directed in this label will control or partially control the weeds listed in Tables 1 and 2.

Partial control means either erratic control (good to poor control) or control that is below what is generally regarded as acceptable control for commercial weed control.

For best post-emergence results, apply **Liberty Mesotrione 4SC** to actively growing weeds.

Dry weather following pre-emergence applications may reduce efficacy of residual weed control. If irrigation is available, apply 1/2-1-inch water after pre-emergence application. If irrigation is not available, make a uniform shallow cultivation as soon as weeds emerge.

Liberty Mesotrione 4SC applied alone or in a tank-mix with atrazine will not provide consistent or adequate control of weeds that are resistant to post-emergence HPPD inhibiting herbicides.

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

Table 1. Weeds Controlled with Post-Emergence Applications of Liberty Mesotrione 4SC

Common Name	Scientific Name	Liberty Mesotrione 4SC 3 Fl. Oz./A Applied Alone	Liberty Mesotrione 4SC ¹ 2.5-3.0 Fl. Oz./A + Atrazine
		Apply to Weeds <5" Tall ²	
Amaranth, palmer	<i>Amaranthus palmeri</i>	PC ⁺	C ⁺
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 ⁺	C ⁺
Buckwheat, wild	<i>Polygonum convolvulus</i>	PC	PC
Buffalobur	<i>Solanum rostratum</i>	C	C
Burcucumber	<i>Sicyos angulatus</i>	PC	C ⁺
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>Xanthum strumarium</i>	C	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	C ⁺	C ⁺
Dandelion	<i>Taraxacum officinale</i>	NC	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 ⁺	C ⁺
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 lacunosa</i>	PC	C
Mustard, wild	<i>Brassica kaber</i>	C	C
Nightshade, black	<i>Solanum nigrum</i>	C	C
Nightshade, Eastern black	<i>Solanum ptychanthum</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 ⁺	C ⁺
Ragweed, common	<i>Ambrosia artemisiifolia</i>	PC	C
Ragweed, giant	<i>Ambrosia trifida</i>	C ⁺	C
Sesbania, hemp	<i>Sesbania exaltata</i>	C	C
Sida, prickly (teaweed)	<i>Sida spinosa</i>	NC	C ⁺
Smartweed, ladythumb	<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>	C	C
Thistle, Canada	<i>Cirsium arvense</i>	NC	PC
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	C ⁺	C

Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C ⁺	C
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¹ Liberty Mesotrione 4SC tank mixture with atrazine is approved only for use on corn and sugarcane.

² Weeds can be controlled at larger than listed sizes; however, to protect crop yield, manage weed resistance, and provide effective control, treat weeds before they reach 5" tall.

⁺Apply before weeds exceed 3" tall.

C = Control NC = Not Controlled PC = Partial Control

Table 2. Weeds Controlled with Pre-Emergence Applications of Liberty Mesotrione 4SC

Common Name	Scientific Name	Liberty Mesotrione 4SC Applied Alone	Liberty Mesotrione 4SC + Atrazine ¹
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>Mollugo verticillata</i>	C	C
Chickweed, common	<i>Stellaria media</i>	C	C
Cocklebur, common	<i>Xanthum 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 lacunosa</i>	PC	C
Nightshade, Eastern black	<i>Solanum ptychanthum</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, ladythumb	<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
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¹**Liberty Mesotrione 4SC** 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 CROP INTERVALS

If **Liberty Mesotrione 4SC** is applied alone follow the crop rotation intervals listed below in Table 3. If **Liberty Mesotrione 4SC** is tank-mixed with other products, then follow the most restrictive product’s crop rotation interval.

Table 3. Time Interval between Liberty Mesotrione 4SC Application and Replanting/Planting of Rotational Crop

Replant/Rotational Interval	Crop
Anytime	Asparagus, Corn (all types), Cranberry, Flax, Kentucky bluegrass grown for seed, Pearl Millet, Oats, Rhubarb, Ryegrass (perennial and annual) grown for seed, Sorghum (grain and sweet), Sugarcane, Tall fescue grown for seed
4 Months	Small grain cereals (wheat, barley, rye)
10 Months	Alfalfa, Blueberry, Canola, Cotton, Currant, Lingonberry, Okra, Peanuts, Peas*, Potato, Rice, Snap Beans*, Soybeans, Sunflowers, Tobacco
18 Months	Cucurbits, Dry beans, Red Clover, Sugar Beets, All other crops

*Plant these rotation crops **ONLY** if the criteria listed below have been met. If all criteria have **NOT** been met, plant peas and snap beans a minimum of 18 months following **Liberty Mesotrione 4SC** application.

- A minimum of 20 inches of rainfall plus irrigation has occurred between application and planting of the rotational crop.
- Soil pH is greater than 6.0.
- 3 fl. oz./A or less of this product has been applied no later than June 30th the year preceding rotational crop planting.
- No other HPPD herbicides (e.g., isoxaflutole, mesotrione, tembotrione or topramezone) were applied the year prior to planting peas and snap beans.

Rotational Crop Restriction:

- Do not plant peas or snap beans on sand, sandy loam, or loamy sand soils in Minnesota or Wisconsin.

CROP USE DIRECTIONS – CORN

Apply **Liberty Mesotrione 4SC** by ground for pre-emergence or post-emergence weed control in field corn, seed corn, yellow popcorn, and sweet corn. Apply **Liberty Mesotrione 4SC** to corn up to 30” tall or up to the 8-leaf stage of corn growth to control broadleaf and grass weeds listed in Tables 1 and 2.

Aerial applications of **Liberty Mesotrione 4SC** can be made pre-emergence or post-emergence 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.**

See seed company instructions for use on field corn inbred lines. Special adjuvant restrictions must be followed for post-emergence applications of **Liberty Mesotrione 4SC** in yellow popcorn or sweet corn (see the **Spray Additives** section of this label). Do not apply **Liberty Mesotrione 4SC** to white popcorn or ornamental (Indian) corn.

Post-emergence application of **Liberty Mesotrione 4SC** to yellow popcorn and sweet corn hybrids may cause crop bleaching. Bleach is transitory and will not affect final yield or quality. Herbicide sensitivity, however, can vary widely in yellow popcorn and sweet corn, and all hybrids of these have not been tested. Contact your local popcorn/sweet corn company, Fieldman, or University Specialist to learn about hybrid recommendations before making a post-emergence application of **Liberty Mesotrione 4SC** to yellow popcorn or sweet corn. Do not include nitrogen based adjuvants (UAN or AMS) when making post-emergence applications of **Liberty Mesotrione 4SC** to yellow popcorn or sweet corn.

Temporary transient bleaching may occur in field corn treated with **Liberty Mesotrione 4SC** post-emergence under extreme weather conditions or when the crop is under stress. Field corn will quickly outgrow this condition and develop normally.

Corn Restrictions:

- Do not apply more than 7.7 fl. oz. (0.24 lb. mesotrione AI) of **Liberty Mesotrione 4SC** per year.
- Do not make more than 2 applications per year.
- Do not exceed 3.0 fl. oz. (0.094 lb. AI/A) in a single post-emergence application.
- Do not make a second application of **Liberty Mesotrione 4SC** within 14 days of the first application.
- Do not feed or harvest forage, grain, or stover within 45 days after application.

Liberty Mesotrione 4SC Used Alone – Post-Emergence

Apply 3.0 fl. oz./A per application. Always add an appropriate adjuvant to the spray tank (see the **Spray Additives** section of this label).

Apply to actively growing weeds. See Table 1 for a complete list of weeds controlled. Susceptible weeds that emerge post-application may be controlled after the herbicide is absorbed into the soil. **Liberty Mesotrione 4SC** will not control most grass weeds.

Two post-emergence applications of **Liberty Mesotrione 4SC** may be made under the following restrictions:

- Only one post-emergence application may be made if **Liberty Mesotrione 4SC** has been applied pre-emergence. Do not exceed a total of 7.7 fl. oz./A (0.24 lb. AI/A) per year.
- Do not make a second application within 14 days of the first application.
- Applications made at rates lower than 3.0 fl. oz./A. (0.094 lb. AI/A) post-emergence may not provide adequate weed control and may result in reduced residual control.
- Do not exceed a total of 6.0 fl. oz./A (0.19 lb. AI/A) for the two post-emergence applications.
- If a post-emergence application of **Liberty Mesotrione 4SC** was made to ground that received pre-emergence treatment of another mesotrione-containing herbicide, atrazine must be tank mixed with **Liberty Mesotrione 4SC**.
- If mixing **Liberty Mesotrione 4SC** with atrazine, do not apply to corn taller than 12".
- Treat corn up to 30" tall or up to the 8-leaf stage of growth.
- Do not harvest, forage, or stover within 45 days post-application.

Liberty Mesotrione 4SC Used Alone – Pre-Emergence

Apply 6.0-7.7 fl. oz./A (0.188-0.24 lb. AI/A) by ground sprayer in 10-30 gals. of water per acre to control broadleaf weeds (up to 80 gals. if applied with liquid fertilizer). See Table 2 for a complete list of weeds controlled. **Liberty Mesotrione 4SC** can be tank mixed with other approved pre-emergence grass herbicides to control grasses. Refer to the tank mix section for a list of tank-mix partners.

Liberty Mesotrione 4SC Tank Mixtures for Corn

Apply **Liberty Mesotrione 4SC** in tank mix with other registered herbicides to improve spectrum of weed control in burndown, pre-emergence, or post-emergence applications. These tank mixtures can also be used to include a different mode of action herbicide to control and manage the development of resistant weed biotypes.

Burndown Tank Mixtures in Corn

Apply **Liberty Mesotrione 4SC** in tank mixture with other registered herbicides for burndown and residual weed control.

Apply 3.0 fl. oz./A **Liberty Mesotrione 4SC** with Paraquat, Glyphosate, Dicamba and 2,4-D Ester for improved broadleaf weed control with limited residual control before planting corn and before corn emergence. For better residual control, apply 6.0-7.7 fl. oz./A **Liberty Mesotrione 4SC** (see Table 2) with the products listed. Use the adjuvant system specified by the burndown herbicide. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

Pre-Emergence Tank Mixture in Corn

Apply 5.3-7.7 fl. oz./A of **Liberty Mesotrione 4SC** in tank mixture with other registered herbicides (Table 4) for pre-emergence residual weed control. Refer to Table 2 for a list of weeds controlled by **Liberty Mesotrione 4SC** applied pre-emergence.

Table 4. Liberty Mesotrione 4SC Tank Mixtures for Pre-Emergence Application in Corn

Refer to the individual product labels of the products listed for precautionary statements, restrictions, use rates, approved uses, and a list of weeds controlled.

Acetochlor	Atrazine + Metolachlor/S-metolachlor + Glyphosate
Acetochlor + Atrazine	Dimethenamid/Dimethenamid-P
Atrazine	Metolachlor/S-metolachlor
Atrazine + Dimethenamid/Dimethenamid-P	Pendimethalin
Atrazine + Metolachlor/S-metolachlor	

Post-Emergence Tank Mixtures in Corn

See Table 5 below for a list of tank mixtures that can be applied after corn has emerged. Do not apply less than 3.0 fl. oz./A of **Liberty Mesotrione 4SC** unless specified on this label or on a state-specific supplemental label, as a loss of residual control can occur.

Always add an appropriate adjuvant to the spray tank (See the **Spray Additives** section of this label). Refer to the 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 use on field corn, yellow popcorn, or sweet corn.

Table 5. Liberty Mesotrione 4SC Tank Mixtures for Post-Emergence Application to Corn

Refer to the individual product labels for products listed for precautionary statements, restrictions, use rates, approved uses, and a list of weeds controlled.

Tank Mix Partner	Use Directions
Atrazine	See Table 1 for application rates and list of weeds controlled.
Atrazine + Metolachlor/ S-metholachlor	Do not use nitrogen based adjuvants (UAN or AMS); apply as post-directed spray Do not use crop oil concentrate (COC); use a non-ionic surfactant (NIS) to avoid crop injury. Control of emerged weeds can be reduced due to the adjuvant effect on weed coverage.
Atrazine + Metolachlor/ S-metolachlor + Glyphosate	Use only on glyphosate tolerant corn (e.g., Agrisure® GT, Roundup Ready®) Crop death will occur if this mixture is applied to a corn hybrid that is not glyphosate tolerant. Do not add urea ammonium nitrate (UAN) or methylated seed oil (MSO) adjuvants to this mixture or crop injury can occur.
Bentzon	This mixture will provide additional broadleaf weed control. Refer to the product label for a list of weeds controlled.
Bromoxynil	This mixture will provide additional broadleaf weed control.
Dicamba + Primisulfuron- methyl	This mixture will control additional weeds. See product label for list of weeds controlled.
Glufosinate- ammonium	Use only on corn designated as LibertyLink® or warranted as tolerant to glufosinate. Use of this mixture on corn hybrids not tolerant to glufosinate will result in severe crop injury or death. Do not use crop oil concentrate (COC) as an adjuvant or crop injury can occur.
Solo Glyphosate Products	Use only on glyphosate tolerant corn (e.g., Agrisure GT, Roundup Ready). Use of this mixture on corn hybrids that are not glyphosate tolerant will result in crop death. Add spray-grade ammonium sulfate (AMS) at a rate that delivers 8.5-17.0 lbs. of AMS/100 gals. of water. If the glyphosate product calls for an adjuvant in addition to AMS, add 0.25-0.5% v/v (1-2 quarts/100 gallons) of a non-ionic surfactant (NIS). Do not add urea ammonium nitrate (UAN), crop oil concentrate (COC) or methylated seed oil (MSO) adjuvants to this tank mixture or crop injury can occur.
Imazethapyr + Imazapyr	Use only on corn designated at Clearfield® corn or warranted by BASF as tolerant to Imazethapyr + Imazapyr. Use of this mixture on corn hybrids not tolerant to Imazethapyr + Imazapyr will result in severe crop injury or death. Do not use Methylated Seed Oil (MSO) or any MSO blend with this mixture or severe crop injury can occur.
Prosulfuron + Primisulfuron- methyl	This mixture will control additional weeds. See product label for list of weeds controlled.
Nicosulfuron	This mixture will provide additional grass control. Refer to the product label for a list of weeds controlled.

Nicosulfuron + Rimsulfuron or Nicosulfuron + Rimsulfuron + Atrazine or Nicosulfuron + Thifensulfuron methyl	This mixture will control additional weeds. See product label for list of weeds controlled.
Prosulfuron	This mixture will control additional weeds. See product label for list of weeds controlled.
Rimsulfuron + Thifensulfuron methyl	This mixture will provide additional weed control. Refer to the product label for a list of weeds controlled.

CROP USE DIRECTIONS – CRANBERRY

Apply **Liberty Mesotrione 4SC** to bearing or non-bearing cranberry beds to control or suppress the weeds listed in Tables 1 and 2, and:

- bog St. John’s wort (*Hypericum boreala*)
- rushes (*Juncus canadensis*, *J. effuses*, *J. bufonlus*, *J. tenuis*)
- sedges spp. (*Carex* spp.)
- silverleaf (*Potentilla pacifica*)
- yellow loosestrife (*Lysimachia terrestris*)

Bearing/Non-Bearing Application Rate Restrictions:

- Apply up to 8 fl. oz./A, but do not apply more than 16 fl. oz./A in total per year.
- Make no more than two 8 fl. oz./A applications per crop per year.
- If two applications are made, do not make them closer than 14 days apart.
- Use 1% v/v of a crop oil concentrate (COC) or 0.25% v/v non-ionic surfactant (NIS).
- Do not use COC adjuvants that are known to injure cranberry leaves.
- **Non-bearing Cranberries:** Apply after the bud break stage no less than 45 days before flooding in fall or winter.
- **Bearing Cranberries:** Apply after the bud break stage no less than 45 days before flooding or harvest.

Liberty Mesotrione 4SC can be applied through irrigation systems (chemigation) including center pivot or solid set.

Sprinkler Irrigation Application – Cranberries Only

Check the irrigation system to ensure uniform application of water to all areas. Thorough coverage of foliage is required for optimal control. Maintain good agitation in the pesticide supply tank prior to and during the entire application process. Inject the specified rate of **Liberty Mesotrione 4SC** into the irrigation system with a metering device designed to introduce a constant flow and will distribute the product to target areas in 0.1-0.2 acre-inch of water. Use the least amount of water with this rate range required for proper distribution and coverage.

After application is complete, flush the entire irrigation and injection systems with clean water before stopping the system. If application is being made during a normal irrigation set of a stationary sprinkler, the

specified rate of **Liberty Mesotrione 4SC** for the area covered should be injected into the system only during the end of the irrigation set for sufficient time to provide optimal coverage and distribution.

CHEMIGATION USE INSTRUCTIONS – SPRINKLER IRRIGATION APPLICATION

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

Non-uniform distribution of treated water can cause crop injury, product ineffectiveness, and/or illegal pesticide residues in the crop. Contact State Extension Service Specialists, equipment manufacturers or other experts if you have questions about calibrating equipment.

Do not connect an irrigation system or greenhouse system used for pesticide application to any public water system. A public water system is any system used for 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. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible personal shall shut the system down and make necessary adjustments should the need arise.

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. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

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. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. 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. Systems must also 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. Any alternatives to the above required safety devices must conform to the list of EPA approved alternative devices.

CHEMIGATION USE RESTRICTIONS – SPRINKLER IRRIGATION APPLICATION

- Do not apply this product through any other type of irrigation system.
- Do not apply when wind speed favors drift beyond the area intended for treatment or non-uniform distribution of treated water.
- Do not apply directly to water or areas where surface water is present outside the bog system.
- Do not contaminate water when disposing of equipment washwater or rinsate.
- Do not apply within 10 feet of surface water outside the bog system.
- Do not spray to runoff.

CROP USE DIRECTIONS – SORGHUM (GRAIN and SWEET)

Pre-Emergence Application Directions

Make pre-emergence application of **Liberty Mesotrione 4SC** or pre-plant non-incorporated applications up to 21 days before planting sorghum for control or partial control of the weeds listed in Table 2.

Apply 6.0-6.4 fl. oz./A broadcast non-incorporated application prior to sorghum emergence. Making the application less than 7 days before planting will increase the risk of plant injury, especially if rainfall or irrigation occurs after the application. Injury symptoms include temporary bleaching of newly emerged leaves. Making application of this product 8-21 days prior to planting will decrease risk of crop injury.

If **Liberty Mesotrione 4SC** is applied prior to planting, minimize disturbance of soil treated with herbicide during the planting process in order to reduce the potential for weed emergence.

If emerged weeds are present at the time of pre-emergence application, use 0.25% v/v of a non-ionic surfactant (NIS) adjuvant or 1% v/v of crop oil concentrate (COC) and add it to the spray solution. A spray-grade UAN applied at a rate of 2.5% v/v or 8.5 lbs./100 gallons of spray solution of ammonium sulfate (AMS) can be added to the spray solution in addition to the COC or NIS.

Pre-Emergence Application Restrictions

- Do not apply more than 6.4 fl. oz./A per year.
- Do not apply to emerged sorghum or severe crop injury can occur.
- Do not use **Liberty Mesotrione 4SC** in the production of forage sorghum, sudangrass, sorghum-sudangrass hybrids, or dual purpose sorghum.
- Do not apply to sorghum that is grown on coarse textured soils (e.g., sandy loam, loamy sand, sand).
- **Texas Restriction:** Do not apply to sorghum grown south of Interstate 20 (I-20) or east of Highway 277.

Post-Emergence Application Directions

Apply **Liberty Mesotrione 4SC** post-directed to grain sorghum to control and/or partially control weeds listed in Table 1. Apply to actively growing weeds for optimal control.

Apply 3.0 fl. oz./A post-directed application when sorghum is at least 8" tall. Make the application by directing the spray between crop rows, and toward the base of the plant. Direct application of **Liberty Mesotrione 4SC** onto foliage can result in crop injury including temporary bleaching. If leaves do bleach, newly emerged leaves following application will not be affected.

Use 0.25% v/v of a non-ionic surfactant (NIS) adjuvant or 1% v/v of crop oil concentrate (COC) and add it to the spray solution. A spray-grade UAN applied at a rate of 2.5% v/v or 8.5 lbs./100 gallons of spray solution of ammonium sulfate (AMS) can be added to the spray solution in addition to the COC or NIS.

Liberty Mesotrione 4SC can be tank-mixed with herbicides registered for use on sorghum to improve weed control. These tank-mixtures can also include a herbicide with a different mode of action to help control or manage the development of resistant weed biotypes.

Post-Directed Restrictions

- Do not make more than one post-directed application.
- Do not apply more than 3.0 fl. oz./A post-directed.
- Do not apply more than 6.4 fl. oz./A per year.
- Do not apply broadcast over-the-top to emerged sorghum or severe crop injury can occur.

- Do not harvest sorghum for forage for 30 days following application.
- Do not harvest for grain or stover for 60 days following application.
- Do not apply after the sorghum seedhead emerges.
- Do not use in the production of forage sorghum, sudangrass, or sorghum-sudangrass hybrids.

CROP USE DIRECTIONS – SUGARCANE

Apply **Liberty Mesotrione 4SC** by ground for pre-emergence, post-emergence over-the-top or post-emergence direct weed control in sugarcane.

Apply **Liberty Mesotrione 4SC** aerially for pre-emergence and post-emergence weed control in the states of: **Florida, Louisiana, and Texas.**

Pre-Emergence Applications

Apply 6.0-7.7 fl. oz./A of **Liberty Mesotrione 4SC** to control weeds listed in Table 2. Make application after the planting of plant-cane or after harvest of ratoon-cane. If weeds are emerged at the time of application, add a crop oil concentrate (COC) type adjuvant at 1% v/v OR a non-ionic surfactant (NIS) type adjuvant at 0.25% v/v to the spray solution. In addition to the 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 lbs./100 gals. of spray solution can be added to the spray solution. Tank mix ametryn or atrazine with **Liberty Mesotrione 4SC** to improve weed control. Refer to the tank mix partner label for specific rates and use directions.

Post-Emergence Applications

Apply 3.0 fl. oz./A of **Liberty Mesotrione 4SC** to control weeds listed in Table 1. Apply as a post-over-the-top or as a post-directed spray to the base of the sugarcane. If a pre-emergence application was made earlier in the season, only one single post-emergence application can be made. If no pre-emergence application was made earlier in the season, then both a post-over-the-top and a post-directed spray application can be made. For optimum weed control, apply to actively growing weeds.

Add either a crop oil concentrate (COC) adjuvant at 1% v/v OR a non-ionic surfactant (NIS) adjuvant to the spray solution. In addition to the COC or NIS, use a spray grade UAN (e.g., 28-0-0) at 2.5% v/v OR ammonium sulfate (AMS) at 8.5 lbs./100 gals. of spray solution to improve weed control.

For additional post-emergence weed control, tank mix **Liberty Mesotrione 4SC** with atrazine, asulam and/or trifloxysulfuron-sodium. Refer to the tank mix product label for specific rate and use directions.

Sugarcane Restrictions:

- Do not apply more than 7.7 fl. oz./A in a pre-emergence application.
- Do not apply more than 3.0 fl. oz./A in a post-emergence application.
- Do not make more than 2 applications per year. If a pre-emergence application is made, only one post-emergence application can be made.
- Do not make two applications less than 14 days apart.
- Do not apply more than 10.7 fl. oz./A per year.
- Do not harvest sugarcane within 114 days following a post-over-the-top treatment (114-day PHI).
- Do not harvest sugarcane with 100 days following a post-directed application (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. Keep away from heat and flame. Do not store near seed, fertilizers, or foodstuffs. Can be stored at temperatures as low as minus 20°F. Keep away from heat and flame.

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

Container Handling ≤ 5 Gallons: Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into formulation equipment. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into formulation equipment or store rinsate for later use or disposal. 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 ≥ 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.

Container Handling [Greater Than 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 a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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

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