



**OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION**

WASHINGTON, D.C. 20460

June 10, 2025

Amanda Foderaro  
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Regulatory Affairs – Herbicides  
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Subject: Label Amendment – Removing Geographical Restriction, and other minor changes  
Registration Review Label Amendment – Incorporating Mitigation Measures from the Registration Review Interim Decision for Mesotrione  
Product Name: CALLISTO XTRA  
EPA Registration Number: 100-1359  
Application Dates: January 10, 2022, and March 30, 2022  
Case Numbers/Decision Numbers: 480904 and 478017 (D582929)

Dear Amanda Foderaro:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 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.

The Agency, in accordance with FIFRA, as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Mestrione Interim Decision. The Agency has concluded that your submission is acceptable.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. *The next label printing of this product must use this labeling unless subsequent changes have been approved.* 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 12 months from the date of this letter. After *12 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 FIFRA 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) lists 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 with FIFRA section 6.

If you have any questions, please contact Jamie Millard at (202) 566-2726 or by email at millard.jamie@epa.gov.

Sincerely,

*Kable Bo Davis*

Kable Bo Davis; Senior Advisor

Office of Pesticide Programs

Registration Division; Immediate Office

Enclosure

**RESTRICTED USE PESTICIDE  
(GROUND AND SURFACE WATER CONCERNS)**

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION. THIS PRODUCT IS A RESTRICTED-USE HERBICIDE DUE TO GROUND AND SURFACE WATER CONCERNS. USERS MUST READ AND FOLLOW ALL PRECAUTIONARY STATEMENTS AND INSTRUCTIONS FOR USE IN ORDER TO MINIMIZE POTENTIAL FOR ATRAZINE TO REACH GROUND AND SURFACE WATER.

**Sale, use, and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.**

<b>ATRAZINE</b>	<b>GROUP</b>	<b>5</b>	<b>HERBICIDE</b>
<b>MESOTRIONE</b>	<b>GROUP</b>	<b>27</b>	<b>HERBICIDE</b>

**Callisto® Xtra**

**Herbicide**

A herbicide for use in Field Corn, Seed Corn, Sweet Corn, Yellow Popcorn, Grain Sorghum, and Sugarcane

**Active Ingredients:**

Atrazine <sup>1</sup> .....	34.30%
Related Compounds .....	0.70%
Mesotrione <sup>2</sup> .....	5.36%
Other Ingredients:	59.64%
<b>Total:</b>	<b>100.0%</b>

Callisto Xtra contains 0.5 pounds of mesotrione and 3.2 pounds of atrazine and related triazines per gallon.

<sup>1</sup>Atrazine with a maximum of 1.4% related triazines. (CAS No. 1912-24-9)

<sup>2</sup>CAS No. 104206-82-8

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

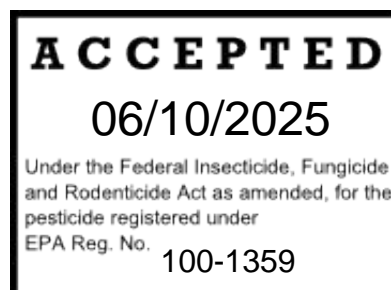
See additional precautionary statements and directions for use [on label] [inside booklet].

EPA Reg. No. 100-1359  
EPA Est.  
SCP 1359A



Net Contents

[Batch Code: \_\_\_\_\_] (For nonrefillables only.)



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## 1.0 FIRST AID

FIRST AID	
<b>If in eyes</b>	<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>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, and 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>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<p align="center"><b>HOTLINE NUMBER</b>            For 24-Hour Medical Emergency Assistance (Human or Animal),            or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident)  <b>Call 1-800-888-8372</b></p>	

## 2.0 PRECAUTIONARY STATEMENTS

### 2.1 Hazards to Humans and Domestic Animals

#### CAUTION

Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing. Harmful if swallowed or inhaled. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

### 2.2 Personal Protective Equipment (PPE)

**Mixers, loaders, applicators, flaggers, and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate, nitrile rubber ≥14 mils, neoprene rubber ≥14 mils, or Viton® ≥14 mils
- Shoes plus socks

- Chemical-resistant apron when mixing/loading, cleaning up spills, cleaning equipment, or otherwise exposed to the concentrate
- A minimum of a NIOSH-approved particulate filtering facepiece respirator with any R, or P filter; OR a NIOSH-approved powered air purifying respirator with HE filters

### 2.2.1 User Safety Requirements

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.

### 2.2.2 Engineering Controls

Mixers and loaders supporting aerial applications must use a closed system that meets the requirements for dermal protections listed in the Worker Protection Standard (WPS) for Agricultural Pesticides (40 CFR 170.607(d-f)) and must:

- wear the personal protective equipment required for mixers and loaders,
- wear protective eyewear if the system operates under pressure,
- be provided and have immediately available for use in an emergency, such as a spill or equipment breakdown: chemical-resistant footwear.

Pilots must use an enclosed cockpit in a manner that is consistent with the WPS for Agricultural Pesticides (40 CFR 170.607(d-f)). Pilots must wear the PPE required on this labeling for applicators, however, they need not wear chemical-resistant gloves when using an enclosed cockpit.

Flaggers supporting aerial applications must use an enclosed cab that meets the definition on the Worker Protection Standard for Agricultural Pesticides (40 CFR 170.607(d-f)) for dermal protection.

When applicators use enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.607(d-e)], the handler PPE requirements may be reduced or modified as specified in the WPS.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.607(d-f)), the handler PPE requirements may be reduced or modified as specified in the WPS.

### 2.2.3 User Safety Recommendations

#### **USER SAFETY RECOMMENDATIONS**

##### **Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## 2.3 Environmental Hazards

This pesticide is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash water.

### 2.3.1 Groundwater Advisory

Callisto Xtra contains the active ingredients atrazine and mesotrione. Atrazine can travel (seep or leach) through soil and can enter groundwater which may be used as drinking water. Atrazine has been found in groundwater. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (groundwater) is close to the surface and where these soils are very permeable, i.e., well-drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

Mesotrione is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are impermeable, particularly where the water table is shallow.

### 2.3.2 Surface Water Advisory

This product may contaminate water through drift of spray in wind. This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow groundwater. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. 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 loading of mesotrione and atrazine from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

### 2.3.3 Mixing/Loading Precautions

This product must not be mixed/loaded, or used within 50 feet of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which



means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading sites.

Additional State imposed requirements regarding well-head setbacks and operational area containment must be observed.

This product must not be mixed or loaded within 50 feet of intermittent streams and rivers, natural or impounded lakes and reservoirs. This product may not be applied aerially or by ground within 66 feet of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 feet around natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 foot buffer or setback from runoff entry points must be planted to crop, seeded with grass or other suitable crop.

#### 2.3.4 Non-Target Organisms Advisory Statement

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

## 2.4 Physical or Chemical Hazards

Do not use or store near heat or open flame.

## DIRECTIONS FOR USE RESTRICTED USE PESTICIDE

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

ANY USE OF THIS PRODUCT IN AN AREA WHERE USE IS PROHIBITED IS A VIOLATION OF FEDERAL LAW. Before using this product, you must consult the Atrazine Watershed Information Center (AWIC) to determine whether the use of this product is prohibited in your watershed. AWIC can be accessed through [www.atrazine-watershed.info](http://www.atrazine-watershed.info) or 1-866-365-3014. If use of this product is prohibited in your watershed, you may return this product to your point of purchase or contact Syngenta Crop Protection, LLC for a refund.

### Endangered Species

It is a Federal offense to use any pesticide in a manner that results in an unauthorized “take” (e.g., kill or otherwise harm) of an endangered species under the Endangered Species Act section 9. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain

Bulletins, consult <http://www.epa.gov/espp/>, call 1-844-447-3813, or email ESPP@epa.gov. You must use the Bulletin valid for the month in which you will apply the product.

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.

**FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.**

#### **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 (WPS).

**Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.** Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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

## **3.0 PRODUCT INFORMATION**

Callisto Xtra is a selective preemergence and postemergence herbicide for control of broadleaf weeds and certain grasses in field corn, seed corn, yellow popcorn, sweet corn, grain sorghum and sugarcane. Callisto Xtra is systemic and is absorbed through the foliage of emerged weeds and by soil uptake. Refer to **Section 9.0** for application timing and rates for each crop.

When applied preemergence, weeds take up the product through the soil during emergence.

When applied postemergence, susceptible weeds absorb the herbicide through the treated foliage and by root uptake from the soil. For best postemergence weed control, apply the product to actively growing weeds. Susceptible weeds which emerge soon after application may be controlled after they absorb the herbicide from the soil. Susceptible weeds cease growth soon after application with complete death of the weeds occurring within 2 weeks.

Callisto Xtra is not effective for the control of many grass weeds. For control of grasses or additional broadleaf weed control, refer to the tank mixing recommendation section on this label.

### 3.1 Weed Resistance Management Practices

ATRAZINE	GROUP	5	HERBICIDE
MESOTRIONE	GROUP	27	HERBICIDE

Naturally occurring biotypes of certain weed species with resistance to triazines, ALS, PPO, glycine (glyphosate) and HPPD-inhibiting herbicides are known to exist. If biotypes of weeds resistant to ALS, PPO and glycine inhibitors are present in the field, this herbicide should control them if they are listed in **Section 8.0**.

To reduce the risk of weeds developing resistance to HPPD-inhibiting herbicides, implement a program including both preemergence and postemergence herbicides that provide effective control of all weeds using multiple modes of action. This includes the use of full labeled rates, scouting fields before application to ensure the herbicide will be appropriate for the weeds present. Scout fields and eliminate weed escapes. If suspected weed resistance is observed against a particular weed species contact your Syngenta or retailer representative or call Syngenta Customer Service (1-800-334-9481). Lack of weed control is not necessarily an indicator of weed resistance.

Consider weed resistance management strategies that include two or more modes of action where a minimum of two modes of action are effective at controlling the target weed when either are applied alone.

Read and follow all label directions.

Callisto Xtra contains two herbicide active ingredients and two modes of action and can be an effective component of a weed resistance management strategy.

#### 3.1.1 Principles of Herbicide Resistant Weed Management

##### Scout and know your field

- Know weed species present in the field to be treated through scouting and field history. An understanding of weed biology is useful in designing a resistance

management strategy. Ensure the weed management program will control all weeds present.

- Fields should be scouted prior to application to determine species present and growth stage. Always apply this herbicide at the full labeled rate and correct timing for the weeds present in the field.

#### **Utilize non-herbicidal practices to add diversity**

- Use diversified management tactics such as cover crops, mechanical weed control, harvest weed seed control, and crop rotation as appropriate.

#### **Use good agronomic practices, start clean and stay clean**

- Use good agronomic practices that enhance crop competitiveness.
- Plant into weed-free fields utilizing tillage or an effective burndown herbicide for control of emerged weeds.
- Sanitize farm equipment to avoid spreading seed or vegetative propagules prior to leaving fields.

#### **Difficult to control weeds**

- Fields with difficult to control weeds should be planted in rotation with crops that allow the use of herbicides with an alternative mode of action or different management practices.
- Difficult to control weeds may require sequential applications, such as a broad spectrum preemergence herbicide followed by one or more postemergence herbicide applications. Utilize herbicides containing different modes of action effective on the target weeds in sequential applications.

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

- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.

- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

### **Do not overuse the technology**

- Do not use more than two applications of this or any other herbicide with the same mode of action in a single growing season unless mixed with an herbicide with a different mode of action which provides overlapping spectrum for the difficult to control weeds.

### **Scout and inspect fields following application**

- Prevent an influx of weeds into the field by controlling weeds in field borders.
- Scout fields after application to verify that the treatment was effective.
- Suspected- herbicide-resistant weeds may be identified by these indicators
  - Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
  - A spreading patch of non-controlled plants of a particular weed species; and
  - Surviving plants mixed with controlled individuals of the same species.
- Report non-performance of this product to your Syngenta retailer, Syngenta representative, or call 1-866-Syngent(a) (866-796-4368). If resistance is suspected ensure weed escapes are controlled using an herbicide with an effective mode of action and/or use non-chemical means to prevent further seed production.

### **Prevent weed escapes before, during, and after harvest**

- Do not allow weed escapes to produce seed or vegetative structures such as tubers or stolons which contribute to spread and survival. Consider harvest weed seed management and control weeds post-harvest to prevent seed production.

### **Resistant Weeds**

- Contact your local Syngenta representative, retailer, crop advisor or extension agent to determine if weeds resistant to modes of action contained in this product are present in your area.
- Do not assume that each listed weed is being controlled by multiple modes of action. Premixes are intended to broaden the spectrum of weeds that are controlled. Some weeds may be controlled by only one of the active ingredients in this product.
- If resistant biotypes have been reported, use the full labeled rate of this product, apply at the labeled timing, and tank-mix with an additional different mode of action product so there are multiple effective modes of action for each suspected resistant weed.

## **4.0 APPLICATION DIRECTIONS**

### **4.1 Methods of Application**

Callisto Xtra may be applied by ground to all labeled crops. Callisto Xtra can be applied by aerial application only to corn and sugarcane.

Callisto Xtra may be applied aerially for weed control in corn only in the following states: Alabama, Arizona, Arkansas, 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.

Callisto Xtra may be applied aerially for weed control in sugarcane only in Florida, Louisiana and Texas.

### **4.2 Application Equipment**

- Configure spray equipment to provide accurate and uniform coverage of the target area and minimize potential for spray drift.
- To ensure accuracy, calibrate sprayer before each use.
- For information on spray equipment and calibration, consult spray equipment manufacturers and/or state recommendations.
- All ground and aerial application equipment must be properly maintained.
- Spray nozzles should be uniformly spaced; the same size and type, and should provide accurate and uniform application.
- Use a pump that can maintain the manufacturer's recommended pressure at the nozzles and provide proper agitation within the tank to keep the product dispersed.
- Low pressures may be used with extended range or drift reduction nozzles but ensure a droplet size of coarse or coarser.
- Do not use floodjet nozzles or controlled droplet application equipment for postemergence applications.
- 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, re-suspend the spray solution by running on full agitation prior to spraying.

### **4.3 Application Volume and Spray Coverage**

- Good spray coverage is essential for optimum postemergence weed control.
- Ground 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, but only high enough to give uniform coverage.
- For preemergence ground applications, apply in a spray volume of 10-80 gal/A.
- For early postemergence ground applications, apply in a spray volume of 10-30 gal. When weed foliage is dense, use a minimum spray volume of 20 gal/A.
- For aerial applications in corn and sugarcane, apply alone or in tank mixture with a minimum total volume of 2 gal/A of spray mixture.

## 4.4 Mixing Directions

1. Thoroughly clean spray equipment before using this product. Dispose of the cleaning solution in a responsible manner. If water is used as the carrier, use clean water. Do not use a sprayer or applicator contaminated with other materials, or crop damage or sprayer clogging of the application device may occur.
2. Prepare no more spray mixture than is needed for the immediate operation.
3. Keep product container tightly closed when not in use.
4. Agitate the spray solution before and during application.
5. Do not let the spray mixture stand overnight in the spray tank.
6. Always ensure that agitation is maintained until spraying is completed, even if stopped for brief periods of time.
7. If the agitation is stopped for more than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying.
8. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area.

### 4.4.1 Callisto Xtra Alone

1. For preemergence applications, either clean water or liquid fertilizer, excluding suspension fertilizers, may be used as carriers. If liquid fertilizer is used, conduct a compatibility test to ensure mixture compatibility.
2. For postemergence applications, use only clean water as the carrier.
3. Provide sufficient agitation during mixing and application to maintain a uniform mixture.
4. Even if Callisto Xtra is physically compatible with a liquid fertilizer, constant agitation is necessary to maintain a uniform mixture during application.
5. Fill the spray tank  $\frac{1}{2}$  full with clean water or liquid fertilizer and add AMS (if used) while continuing agitation.
6. Add Callisto Xtra slowly and agitate until completely dissolved.
7. Add an adjuvant last, if needed.
8. Complete filling the sprayer tank and continue agitation.

### 4.4.2 Tank-Mix Precautions

- It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions, limitations and directions for use on all specified product labels involved in tank mixing. User must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.
- The safety of all potential tank mixes on all crops may not have been tested. Before applying any tank mixture not specifically recommended on this label, the safety to the target crop should be confirmed.
- Tank mixes of Callisto Xtra with other pesticides, fertilizers, or any other additives not specifically labelled for use with Callisto Xtra may result in tank mix incompatibility or unsatisfactory performance. In such cases, always check tank mix compatibility by conducting a jar test according to guidance in **Section 4.4.3** before actual tank mixing.



### 4.4.3 Tank-Mix Compatibility

- Conduct a jar test using a 1 pt to 1 qt container with lid by adding water or other intended carrier such a liquid fertilizer to the jar.
- Next, add the appropriate amount of pesticide(s) or tank-mix partner(s) in their relative proportions based on specified label rates. Add tank-mix components separately in the order described in the tank-mixing section, **Section 4.4.4**. After each addition, shake or stir gently to thoroughly mix.
- After all ingredients have been added, put the lid on the jar, tighten and invert the jar 10 times to mix.
- After mixing, let the mixture stand 15–30 minutes and then examine for signs of incompatibility such as obvious separation, large flakes, precipitates, gels or heavy oily film on the jar.
- If the mixture remains mixed or can be remixed readily, it is physically compatible and can be used.
- If the mixture is incompatible, repeat the test using a compatibility agent at the specified rate. Or, if applicable, slurry dry formulations in water before adding to the jar. If incompatibility is still observed after following these procedures, do not use the mixture.
- After compatibility testing is complete, dispose of any pesticide wastes in accordance with the storage and disposal section, **Section 10.0**, of this label.

### 4.4.4 Callisto Xtra In Tank Mixtures

1. Fill the spray tank or premix tank half full with clean water or liquid fertilizer.
2. Use only clean water as the carrier if applying Callisto Xtra after crop emergence.
3. Begin tank agitation and continue constantly throughout mixing and spraying.
4. Prepare the components and add in the following order:
  - a) If ammonium sulfate (AMS) is used, add slowly while continuing agitation until completely dispersed.
  - b) If a wettable powder or dry flowable formulation is used, make a slurry with water and add it slowly through the screen into the tank. Agitate during the procedure. Mixing and compatibility may be improved when a dry flowable is diluted with water before adding to the tank.
  - c) If a liquid formulation (excluding EC) is used, add slowly through screen into the tank.
  - d) Add Callisto Xtra.
  - e) Add any other tank mix products next with emulsifiable concentrate (EC) products added last.
  - f) Add an adjuvant last, if needed.
5. Complete filling the sprayer tank and continue agitation.
6. Apply as soon as possible after spray mixture is prepared.
7. Do not leave mixture in spray tank overnight without agitation or unattended.

If Callisto Xtra is added to the spray tank via induction, compatibility may be compromised. If an induction tank (or similar equipment) is used, add each product separately and allow each to disperse into the spray tank before adding the next product. For best tank-mix compatibility, rinse the induction tank with water before adding each component.



#### 4.4.5 Spray Additives

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.

Applications of Callisto Xtra to emerged weeds must include either a crop oil concentrate or a non-ionic surfactant. In addition, a spray grade ammonium sulfate may also be added. Refer to the specific crop use directions, **Section 9.0**, for additional information on spray additives.

- Where Callisto Xtra is applied after the crop has emerged, add a crop oil concentrate (COC) at 1% v/v (1 gal/100 gal) or non-ionic surfactant (NIS) at 0.25% v/v (1 qt/100 gal).
- In addition to NIS or COC, a spray grade ammonium sulfate (AMS) at 8.5-17 lb/100 gallons of water or may also be used.
- The use of methylated seed oil (MSO) adjuvants or MSO blend adjuvants for postemergence applications of Callisto Xtra may result in severe injury to corn or sorghum.
- Any of these adjuvants may be used at a preemergence or preplant timing, i.e. where the crop has not yet emerged to increase burndown activity on existing weeds.

#### 4.5 Sprayer Cleanout

Special attention must be given to cleaning equipment before spraying a crop not on this label. Mix only as much spray solution as needed.

Use the following procedure for cleaning spray equipment:

1. Flush tank, hoses, boom, and nozzles with clean water.
2. Prepare a cleaning solution of 1 gallon of household ammonia per 25 gallons 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 re-circulate 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 1-4 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.

## 5.0 ROTATIONAL CROP RESTRICTIONS

When Callisto Xtra is applied as directed on this label, follow the crop replant/rotational intervals shown below. If Callisto Xtra is tank mixed with other products, follow the most restrictive product's crop rotation interval. The replant/rotational interval is the time between the last application of Callisto Xtra and planting of the replant/rotational crop.

Crop	Replant/Rotational Interval
Field corn Seed corn Sweet corn Yellow popcorn Grain sorghum Sugarcane	Anytime
Small grain cereals including wheat, barley and rye	4 Months
Alfalfa Canola Cotton Flax Peanuts Potatoes Soybeans Sunflower Tobacco Rice	10 Months
All other rotational crops	18 months
<b>ROTATIONAL CROPS USE PRECAUTIONS</b>	
<ul style="list-style-type: none"> <li>Injury may occur to soybeans planted the year following application on soils having a calcareous surface layer if additional atrazine or atrazine-containing products are used.</li> <li>If applied after June 1, rotating to crops other than those listed under the anytime interval may result in crop injury.</li> </ul>	
<b>ROTATIONAL CROPS USE RESTRICTIONS</b>	
<ul style="list-style-type: none"> <li>In eastern parts of the Dakotas, KS, western MN, and NE, <b>DO NOT</b> rotate to soybeans for 18 months following application if the combined atrazine rate applied was more than 2.0 lb ai/A, or equivalent band application rate, or soybean injury may occur.</li> <li>In the High Plains and Intermountain areas of the West, where rainfall is sparse and erratic or where irrigation is required, only plant corn (all types), or grain sorghum as the subsequent crop, following an application of Callisto Xtra to corn (all types), or grain sorghum.</li> </ul>	

Users must only apply to fallow land in the following states according to the prescribed rotation pattern in the table below:

Fallow Rotation Pattern	Fallow Use Authorized in these States only
Wheat-Corn-Fallow	CO, KS, ND, NE, SD & WY
Wheat-Fallow-Wheat	CO, KS, ND, NE, SD & WY
Wheat-Sorghum-Fallow	AR, CO, GA, IL, KS, LA, MS, MO, NE, NM, NC, OK, SD & TX

## 6.0 COVER CROPS

A cover crop can be an important tool for the overall farm cropping system. Cover crops are planted for conservation purposes, soil erosion control, soil health improvement, water quality improvement and weed management. A cover crop can be a single crop or a combination of crops, including grasses and/or broadleaf crops.

After harvest of a Callisto Xtra treated crop, planting of a cover crop is allowed provided the cover crop is not grazed or fed to livestock nor harvested for food. Terminate the cover crop through natural causes such as frost or intentional termination by herbicide application, crimping, rolling, tillage or cutting.

All possible cover crops or cover crop combinations have not been tested for tolerance to this product. Before planting the cover crop, determine the level of tolerance for the intended cover crops by conducting a field bioassay. Refer to **Section 6.1** for instructions on how to conduct a field bioassay.

### 6.1 Field Bioassay for Cover Crops

A field bioassay is a method of determining if herbicide residues are present in the soil at concentrations high enough to adversely affect crop growth.

Conduct the field bioassay by planting several strips of the desired cover crop across the field which has been previously treated with Callisto Xtra. Plant the cover crop strips perpendicular to the direction of the product application. Locate the strips so that all the different field conditions are encountered, including differences in field terrain, soil texture, organic matter, pH, and drainage.

If the cover crop does not show adverse effects such as crop injury and/or stand reduction, the field can be planted to this cover crop. If injury and/or stand reduction are visible, wait two to four weeks for further herbicide degradation to occur and repeat the bioassay. Alternatively, select a different cover crop and repeat the bioassay. Only plant cover crops that show acceptable tolerance in the field bioassay.

## 7.0 RESTRICTIONS AND PRECAUTIONS

### 7.1 Use Restrictions

- Sale, use, and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.
- Not for use in the states of Hawaii or Alaska, or in the U.S. territories (Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, and the North Mariana Islands).
- Certain states may have established rate limitations within specific geographical areas for the use of atrazine. These more restrictive/protective requirements must be followed. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.
- **DO NOT** apply under conditions which favor runoff or wind erosion of soil containing this product to non-target areas.
- **DO NOT** apply this product within 50 ft of wells, including abandoned wells, drainage wells, and sink holes.

- **DO NOT** use this product within 50 ft of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs. **DO NOT** apply this product within 66 ft of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 ft from the edge of natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 ft buffer or setback from runoff entry points the buffer or setback must be planted to the intended crop, or seeded with grass or other suitable crop.
- **DO NOT** apply Callisto Xtra through any type of irrigation system.
- **DO NOT** apply by air to sorghum. Aerial application is only permitted to corn and sugarcane in certain states. Refer to **Section 4.1**.
- **Commercial Fertilizer:** The impregnation of dry bulk commercial fertilizer is restricted to 340 tons per worker per day for no more than 30 days per calendar year for use on corn and grain sorghum.
- **DO NOT** contaminate irrigation water used for crops or water used for domestic purposes.

## 7.2 Restrictions for Tile-Outletted Terraced Fields Containing Standpipes

One of the following restrictions must be used in applying atrazine to tile-outletted terraced fields containing standpipes:

1. Do not apply this product within 66 feet of standpipes in tile-outletted terraced fields.
2. Apply this product to the entire tile-outletted terraced field and immediately incorporate it to a depth of 2-3 inches in the entire field.
3. Apply this product to the entire tile-outletted terraced field under a no-till practice only when a high crop residue management practice is practiced. High crop residue management is described as a crop management practice where little or no crop residue is removed from the field during and after crop harvest.

## 7.3 Use Precautions

- To prevent off-site movement due to runoff or wind erosion:
  - Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
  - Do not apply to impervious substrates, such as paved or highly compacted surfaces.
  - Do not use tail water from the first flood or furrow irrigation of treated fields to treat non-target crops, unless at least ½ inch of rainfall has occurred between application and the first irrigation.
- Applied according to directions and under normal growing conditions, Callisto Xtra will not harm the treated crop. During germination and early stages of growth, extended periods of unusually cold and wet or hot and dry weather, insect or plant disease attack, carryover pesticide residues, the use of certain soil applied systemic insecticides, improperly placed fertilizers or soil insecticides, may weaken crop seedlings. Callisto Xtra used under these conditions could result in crop injury.

- Dry weather following preemergence application of Callisto Xtra or a Callisto Xtra tank mixture may reduce effectiveness. If possible, cultivate if weeds develop.
- Applying this product after crop emergence in a carrier other than water (e.g. fertilizers) will result in significant crop injury.
- Cultivation within 7 days before or after a Callisto Xtra application may result in reduced weed control.

## 7.4 Spray Drift Management

### MANDATORY SPRAY DRIFT MANAGEMENT

#### 7.4.1 Aerial Applications

- Do not release spray at a height greater than 10 ft above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to select nozzle and pressure that deliver coarse or coarser droplets in accordance with the American Society of Agricultural & Biological Engineers Standard 572 (ASABE S672).
- User must maintain a 150 foot (460 m) in-field downwind buffer (in the direction in which the wind is blowing) from the edge of streams and rivers, as well as high-tide line for all estuarine/marine environments.
- If the windspeed is 10 miles per hour or less, applicators must use  $\frac{1}{2}$  swath displacement upwind at the downwind edge of the field. When the windspeed is between 11-15 miles per hour, applicators must use  $\frac{3}{4}$  swath displacement upwind at the downwind edge of the field.
- Do not apply when wind speeds exceed 15 mph at the application site. If the windspeed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- Do not apply during temperature inversions.

#### 7.4.2 Ground Boom Applications

- Do not release spray at a height greater than 3 feet above the ground or crop canopy.
- Applicators are required to select nozzle and pressure that deliver coarse or coarser droplets in accordance with the American Society of Agricultural & Biological Standard 572 (ASABE S572).
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.
- User must maintain a 15 foot (4.6 m) in-field downwind buffer (in the direction in which the wind is blowing) from the edge of streams and rivers, as well as high-tide line for all estuarine/marine environments.

#### 7.4.3 Boomless Ground Applications

- Applicators are required to select nozzle and pressure that deliver coarse or coarser droplets in accordance with the American Society of Agricultural &

Biological Engineers Standard 572 (ASABE S572).

- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.
- User must maintain a 15 foot (4.6 m) in-field downwind buffer (in the direction in which the wind is blowing) from the edge of streams and rivers, as well as high-tide line for all estuarine/marine environments.

## 7.5 Spray Drift Advisories

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

### 7.5.1 Importance of Droplet Size

- An effective way to reduce spray drift is to apply large droplets.
- Use the largest droplets that provide target pest control.
- While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

### 7.5.2 Controlling Droplet Size – Ground Boom

- **Volume** – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- **Pressure** – Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- **Spray Nozzle** – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

### 7.5.3 Controlling Droplet Size – Aircraft

- **Adjust Nozzles** – Follow manufacturer's recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

### 7.5.4 Boom Height – Ground Boom

- For ground equipment, the boom should remain level with the crop and have minimal bounce.

### 7.5.5 Boom Height – Ground Boom

- Higher release heights increase the potential for spray drift.

### 7.5.6 Handheld Technology Applications

- Take precautions to minimize spray drift.

### 7.5.7 Shielded Sprayers

- Shielding the boom or individual nozzles can reduce spray drift.
- Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

### 7.5.8 Temperature and Humidity

- When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

### 7.5.9 Temperature Inversions

- Drift potential is high during a temperature inversion.
- Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind.
- The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator.
- Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### 7.5.10 Wind

- Drift potential generally increases with wind speed. **AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.**
- Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

### 7.5.11 Windblown Soil Particles

- Callisto Xtra has the potential to move off-site due to wind erosion.
- Soils that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions and low organic matter content.
- Other factors which can affect the movement of windblown soil include the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, and drainage patterns.
- Avoid applying Callisto Xtra if prevailing local conditions may be expected to result in off-site movement.

### 7.5.12 Boomless Ground Applications



- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

## 8.0 WEEDS CONTROLLED

Callisto Xtra applied as directed in this label will control or suppress the weeds listed in **Sections 8.1** and **8.2**. Additional weeds may be controlled with tank mixes. See **Section 9.1.2, 9.2.2, and 9.4.2** for specified tank mix combinations. Always consult the tank mix product labels for specific rates and use directions.

### PARTIAL WEED CONTROL

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

### 8.1 Weeds Controlled or Partially Controlled by Preemergence Application of Callisto Xtra

Common Name	Scientific Name	Weed Rating
Amaranth, palmer	Amaranthus palmeri	C
Amaranth, Powell	Amaranthus powellii	C
Amaranth, spiny	Amaranthus spinosus	C
Broadleaf signalgrass	Urochloa platyphylla	PC
Buffalobur	Solanum rostratum	C
Carpetweed	Mollugo verticillata	C
Chickweed, common	Stellaria media	C
Chickweed, mouseear	Cerastium fontanum	C
Cocklebur, common	Xanthium strumarium	PC
Crabgrass, large	Digitaria sanguinalis	PC
Deadnettle, purple	Lamium purpureum	C
Galinsoga, smallflower	Galinsoga parviflora	C
Henbit	Lamium amplexicaule	C
Horseweed (maretail)	Erigeron canadensis	C
Jimsonweed	Datura stramonium	C
Kochia	Kochia scoparia	PC
Ladysthumb smartweed	Persicaria maculosa	C
Lambsquarters, common	Chenopodium album	C
Morningglory, ivyleaf/entireleaf	Ipomoea hederacea	PC
Morningglory, pitted	Ipomoea lacunosa	PC



Common Name	Scientific Name	Weed Rating
Nightshade, eastern black	<i>Solanum ptycanthum</i>	C
Nightshade, hairy	<i>Solanum physalifolium</i>	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C
Pigweed, tumble	<i>Amaranthus albus</i>	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C
Ragweed, giant	<i>Ambrosia trifida</i>	PC
Shepherd's-purse	<i>Capsella bursa-pastoris</i>	C
Smartweed, pale	<i>Persicaria lapathifolia</i>	C
Smartweed, Pennsylvania	<i>Persicaria pensylvanica</i>	C
Sunflower, common	<i>Helianthus annuus</i>	PC
Velvetleaf	<i>Abutilon theophrasti</i>	C
Waterhemp	<i>Amaranthus tuberculatus</i>	C
<ul style="list-style-type: none"> <li>• C = Control, PC = Partial Control</li> <li>• If irrigation or a significant rainfall does not occur within 7 days after a preplant or preemergence application, weed control may be decreased. If irrigation is available, apply ½ to 1 inch of water. If irrigation is not available, a uniform shallow cultivation is advised as soon as weeds emerge or apply an appropriately labeled herbicide to control emerged weeds.</li> <li>• Should weeds develop after application, a shallow cultivation or rotary hoeing will generally result in improved weed control. If Callisto Xtra was incorporated, cultivate less than half the depth of incorporation.</li> <li>• If cultivation is necessary due to soil crusting, compaction, or escaped weeds, adjust equipment to run shallow and minimize soil movement. This will decrease the possibility of diluting or moving the herbicide from the weed control zone.</li> </ul>		

## 8.2 Weeds Controlled or Partially Controlled by Postemergence Application of Callisto Xtra

Optimum postemergence weed control will be obtained if an application of Callisto Xtra is made following label directions when weeds are actively growing. When weeds are stressed and not actively growing due to drought, heat, lack of fertility, flooding, or prolonged cool temperatures, control can be reduced or delayed.

To achieve control or partial postemergence control, apply when weeds are 4 inches in height or less. Refer to the section at the end of this table for weeds that must be treated at 2 inches in height or less.

Common Name	Scientific Name	Weed Rating
Amaranth, Palmer	<i>Amaranthus palmeri</i>	C
Amaranth, Powell	<i>Amaranthus powellii</i>	C
Amaranth, spiny	<i>Amaranthus spinosus</i>	C

Common Name	Scientific Name	Weed Rating
Atriplex prostrata	<i>Atriplex calotheca</i>	C
Buckwheat, wild	<i>Fallopia convolvulus</i>	PC
Buffalobur	<i>Solanum rostratum</i>	C
Burcucumber	<i>Sicyos angulatus</i>	C
Carpetweed	<i>Mollugo verticillata</i>	C
Carrot, wild	<i>Daucus carota</i>	C
Chickweed, common	<i>Stellaria media</i>	C
Cocklebur, common	<i>Xanthium strumarium</i>	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	C
Dandelion	<i>Taraxacum officinale</i>	PC
Dock, curly	<i>Rumex crispus</i>	PC
Galinsoga, smallflower	<i>Galinsoga parviflora</i>	C
Hemp	<i>Cannabis sativa</i>	C
Horsenettle	<i>Solanum carolinense</i>	C
Horseweed (maretail)	<i>Erigeron canadensis</i>	C
Jimsonweed	<i>Datura stramonium</i>	C
Knotweed, prostrate	<i>Polygonum aviculare</i>	PC
Kochia	<i>Bassia scoparia</i>	C
Ladysthumb (smartweed)	<i>Persicaria maculosa</i>	C
Lambsquarters, common	<i>Chenopodium album</i>	C
Mallow, Venice	<i>Hibiscus trionum</i>	C
Morningglory, ivyleaf/entireleaf	<i>Ipomoea hederacea</i>	C
Morningglory, pitted	<i>Ipomoea lacunose</i>	C
Mustard, wild	<i>Sinapis arvensis</i>	C
Nightshade, black	<i>Solanum nigrum</i>	C
Nightshade, Eastern black	<i>Solanum ptychanthum</i>	C
Nightshade, hairy	<i>Solanum physalifolium</i>	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	PC
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C
Pigweed, tumble	<i>Amaranthus albus</i>	C
Pokeweed, common	<i>Phytolacca americana</i>	PC
Potatoes, volunteer	<i>Solanum</i> spp.	C
Pusley, Florida	<i>Richardia scabra</i>	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C
Ragweed, giant	<i>Ambrosia trifida</i>	C

Common Name	Scientific Name	Weed Rating
Sesbania, hemp	<i>Sesbania herbacea</i>	C
Sida, prickly (teaweed)	<i>Sida spinosa</i>	C
Signalgrass, broadleaf	<i>Urochloa platyphylla</i>	C
Smartweed, pale	<i>Persicaria lapathifolia</i>	C
Smartweed, Pennsylvania	<i>Persicaria pensylvanica</i>	C
Sunflower, common	<i>Helianthus annuus</i>	C
Thistle, Canada	<i>Cirsium arvense</i>	PC
Velvetleaf	<i>Abutilon theophrasti</i>	C
Waterhemp	<i>Amaranthus tuberculatus</i>	C
<ul style="list-style-type: none"> <li>• C = Control, PC = Partial Control</li> <li>• For control or partial control, apply to the following weeds before they reach 2 inches in height. Applying to these weeds when they are more than 2 inches in height may result in reduced control. <ul style="list-style-type: none"> <li>○ Broadleaf signalgrass</li> <li>○ Burcucumber</li> <li>○ Common ragweed</li> <li>○ Entireleaf morningglory</li> <li>○ Florida pusley</li> <li>○ Giant ragweed</li> <li>○ Ivyleaf morningglory</li> <li>○ Large crabgrass</li> <li>○ Palmer amaranth</li> <li>○ Pitted morningglory</li> <li>○ Prickly sida</li> <li>○ Waterhemp</li> </ul> </li> </ul>		

## 9.0 CROP USE DIRECTIONS

### SOIL TEXTURES

Where rates are based on coarse, medium, or fine textured soils, soil textural classes are categorized as follows:

Coarse	Medium	Fine
Loamy sand Sand Sandy loam	Loam Sandy Clay Sandy Clay Loam Silt Silt loam	Clay Clay loam Silty clay Silty clay loam

## 9.1 Corn (Field Corn, Seed Corn, Sweet Corn, and Yellow Popcorn)

### 9.1.1 Preplant, Preemergence and Early Postemergence Applications

Crops (including cultivars, varieties, and/or hybrids of these)		
Field Corn Seed Corn	Sweet Corn Yellow Popcorn	
Application Timing	Rate	Use Directions
Burndown	<p>Apply at 20 - 24 fl oz/A</p> <p>Apply the higher rate for extended residual or control of heavy weed infestations.</p>	<p><b>This application method for Callisto Xtra will require a follow-up weed control treatment.</b></p> <p>Apply to all corn types (field corn, seed corn, sweet corn and yellow popcorn).</p> <p>For control of early emerging weeds, prior to crop emergence.</p> <p>Include a tank mix partner for an additional mode of action and extended residual control.</p> <p>If weeds are present at the time of application, add a non-ionic surfactant (NIS) at 0.25% v/v, crop oil concentrate (COC) at 1% v/v or methylated seed oil (MSO) at 1% v/v.</p> <p>In addition to NIS, COC or MSO, a spray grade ammonium sulfate (AMS) at 8.5-17 lb/100 gallons of water may also be added to the spray solution.</p>
Preplant and Preemergence	<p>Apply at the following rates based on soil texture and organic matter (OM):</p> <p><i>For soils with <math>\geq 3\%</math> OM:</i> 51 fl oz/A</p> <p><i>For soils with <math>&lt; 3\%</math> OM:</i> 44 - 51 fl oz/A</p> <p>The higher rate may be applied on soils with <math>&lt; 3\%</math> OM for extended residual or control of heavy weed infestations.</p>	<p>Apply to all corn types (field corn, seed corn, sweet corn and yellow popcorn).</p> <p>For weed control, prior to crop emergence.</p> <p>Callisto Xtra can be used in all tillage systems including conventional, reduced and no-till corn.</p> <p>Application of Callisto Xtra at more than 28 days before planting will require a follow-up weed control treatment.</p> <p>If weeds are present at the time of application, add a non-ionic surfactant (NIS) at 0.25% v/v, crop oil concentrate (COC) at 1% v/v or methylated seed oil (MSO) at 1% v/v.</p> <p>In addition to NIS, COC or MSO, a spray grade ammonium sulfate (AMS) at 8.5-17 lb/100 gallons of water may also be added to the spray solution.</p>

Early Postemergence	Apply at 20 - 24 fl oz/A  Apply the higher rate for extended residual or control of heavy weed infestations.	Apply to all corn types (field corn, seed corn, sweet corn and yellow popcorn).  Apply after crop emergence but before corn exceeds 12 inches in height.  Application must include either a crop oil concentrate (COC) at 1% v/v or a non-ionic surfactant (NIS) at 0.25% v/v. In addition, a spray grade ammonium sulfate (AMS) at 8.5-17 lb/100 gallons of water is also recommended.
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**Tank Mix Options:**

- Refer to **Section 9.1.2** for tank-mix options.
- This product will not provide consistent control of emerged grass weeds. For control of emerged grass weeds a grass herbicide tank mix may be required.

**Resistance Management:**

- Refer to **Section 3.1**.

**Precautions:**

- On soils with greater than 10% organic matter, Callisto Xtra residual activity will be affected resulting in reduced or poor weed control.
- If irrigation or a significant rainfall does not occur within 7 days after a preplant or preemergence application, weed control may be decreased. If irrigation is available, apply ½ to 1 inch of water. If irrigation is not available, a uniform shallow cultivation is advised as soon as weeds emerge or apply an appropriately labeled herbicide to control emerged weeds.
- 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.
- Postemergence herbicide sensitivity in sweet corn and yellow popcorn varies widely, and all sweet corn and yellow popcorn hybrids have not been tested. Applications of Callisto Xtra to sensitive corn inbreds can result in significant crop injury. Contact your sweet corn or popcorn company, Agronomist, or University Specialist about hybrid recommendations before making a postemergence application of Callisto Xtra to sweet corn or yellow popcorn.
- Using a crop oil concentrate will provide consistently better postemergence weed control than NIS but will increase the risk of postemergence injury and especially to sweet corn and popcorn.
- Avoid the use of methylated seed oil (MSO) adjuvants or MSO blend adjuvants for postemergence applications of Callisto Xtra due to the potential for severe crop injury.
- Applying Callisto Xtra postemergence to corn that has received an at-plant application of Counter® or Lorsban® insecticide can result in severe corn injury.
- Applying Callisto Xtra postemergence within 7 days before or 7 days after any organophosphate or carbamate insecticide can result in severe corn injury.

**USE RESTRICTIONS**

- 1) Refer to **Section 7.1** for additional product use restrictions.
- 2) **Maximum Single Preemergence Application Rate:** 51 fl oz/A (1.3 lb ai/A atrazine and 0.2 lb ai/A mesotrione)
- 3) **Maximum Single Postemergence Application Rate:** 24 fl oz/A (0.6 lb ai/A atrazine and 0.094 lb ai/A mesotrione)
- 4) **Minimum Application Interval:** 14 days
- 5) **Maximum Annual Rate:** 51 fl oz/A/year
  - a. **DO NOT** exceed 2.5 lb ai/A/year of atrazine-containing products.
  - b. **DO NOT** exceed 0.24 lb ai/A/year of mesotrione-containing products.
- 6) **DO NOT** make more than two Callisto Xtra applications per year.
- 7) **DO NOT** apply Callisto Xtra to corn that is greater than 12 inches in height.
- 8) **DO NOT** use on white popcorn or ornamental (Indian) corn or injury may occur.
- 9) Applications by mechanically pressurized handguns are prohibited in sweet corn.

- 10) **DO NOT** graze or feed forage from treated areas for 60 days following application, or illegal residues may result. For sweet corn, **DO NOT** graze or feed forage from treated areas for 45 days following application, or illegal residues may result.
- 11) **Atrazine Restrictions:**
- Apply a maximum of 2.0 lb ai/A as a single preemergence application on soils that are not highly erodible or on highly erodible soils (as defined by the Natural Resource Conservation Service) if at least 30% of the soil is covered with plant residues.
  - Apply a maximum of 1.6 lb ai/A as a single preemergence application on highly erodible (as defined by the Natural Resource Conservation Service) soils if <30% of the surface is covered with plant residues; or 2.0 lb ai/A if only applied postemergence.
  - Atrazine Concentration in Callisto Xtra: For purposes of calculating total atrazine active ingredient applied, Callisto Xtra contains 3.2 lb ai atrazine plus related triazines per gallon.
- 12) **Preharvest Interval (PHI):**
- Field corn: 60 days
  - Sweet corn: 45 days

## 9.1.2 Corn Tank-Mix Combinations

Application	Tank-Mix Brands	Use Directions
Burndown, Preplant and Preemergence Applications	Gramoxone brands  Roundup® or other glyphosate brands  Sequence®  Sharpen®	Apply to all corn types (field corn, seed corn, sweet corn and yellow popcorn).  For control of early emerging weeds, prior to crop emergence.  Add Gramoxone® and Roundup for burndown of emerged weeds.  Add Sequence for burndown plus residual grass weed control.  Add Sharpen for burndown weed control.  In these applications, an adjuvant may be added. Refer to <b>Section 4.4.5</b> for spray additive information.
	AAtrex® brands or other solo atrazine products  Bicep II Magnum Bicep Lite II Magnum Dual II Magnum Princep®	Apply to all corn types (field corn, seed corn, sweet corn and yellow popcorn).  For weed control, prior to crop emergence.  Apply in either conventional, reduced, or no-till systems and by the same methods and at the same timings as Callisto Xtra unless otherwise specified in the tank mix product label.  Tank mix with AAtrex, Bicep II Magnum, Bicep Lite II Magnum and Princep for grass control and improved broadleaf weed control.  Tank mix with Dual II Magnum for grass and small seeded broadleaf weed control.
Early Postemergence	AAtrex brands or other solo atrazine products	Apply to all corn types (field corn, seed corn, sweet corn and yellow popcorn).

		For Improved broadleaf weed control or extended residual.
	Accent® Q Basis® Blend Steadfast® Q	<b>Apply these tank mixtures only on Field Corn.</b>  Apply this tank mixture for control of grass weeds.
	Basagran or other bentazon solo products	Apply to all corn types (field corn, seed corn, sweet corn and yellow popcorn).  Apply this tank mixture for improved broadleaf weed control.
	Bicep II Magnum® Bicep Lite II Magnum®	Apply to all corn types (field corn, seed corn, sweet corn and yellow popcorn).  Apply this tank mixture for improved grass and broadleaf weed control.
	Moxy™ or other 2 lb/gallon bromoxynil solo products  Clarity® Status®	<b>Apply these tank mixtures only on Field Corn.</b>  Apply this mixture for improved control of certain broadleaf weed (refer to tank mix product label for specific weeds).
Postemergence Application to Glufosinate Tolerant Corn	Liberty®	<b>Application to corn that is not glufosinate tolerant will result in crop death.</b>  Apply this mixture for improved weed control (refer to tank mix product label for specific weeds).  Always add spray-grade ammonium sulfate (AMS) at 8.5-17 lb/100 gallons of spray solution to the tank mixture.  When using liquid ammonium sulfate (AMS) products, use a rate that delivers an AMS equivalent of 8.5-17 lb/100 gallons of spray solution.  Do not use crop oil concentrate (COC) as an adjuvant when tank mixing Callisto Xtra with Liberty or severe crop injury may occur.  Follow all other directions for use, including adjuvants, as specified on the Liberty product label.
Postemergence Application to Glyphosate Tolerant Corn	Roundup or other solo glyphosate brands	<b>Application to corn that is not glyphosate tolerant will result in crop death.</b>  Apply this mixture for improved weed control (refer to tank mix product label for specific weeds).  If the glyphosate product has a built-in adjuvant system (i.e. the product label does not recommend additional adjuvant), add only spray-grade ammonium sulfate (AMS).  The recommended rate of AMS is 8.5-17 lb/100 gallons of spray solution. When using liquid AMS products, use a rate that delivers an AMS equivalent of 8.5-17 lb/100 gallons of spray solution.



		<p>If the glyphosate product label recommends an adjuvant in addition to ammonium sulfate (AMS), add a non-ionic surfactant (NIS) at 1-2 qt/100 gallons of spray solution (0.25-0.5%v/v).</p> <p>Do not add urea ammonium nitrate (UAN) or methylated seed oil (MSO) type adjuvants to the tank mixture of Callisto Xtra plus glyphosate or crop injury may occur.</p> <p>The use of crop oil concentrate (COC) type adjuvants may also reduce the activity of glyphosate.</p> <p>Follow all other directions for use, including adjuvants and labelled for glyphosate tolerant corn, as specified on the Roundup or other solo glyphosate brands labels.</p>
<b>TANK-MIX USE PRECAUTIONS</b>		
<ul style="list-style-type: none"> <li>All use precautions cited in <b>Section 9.1.1</b> for Callisto Xtra solo apply to tank mixes with Callisto Xtra.</li> <li>Application of Callisto Xtra postemergence in a tank mix with emulsifiable concentrate (EC) products will result in significant crop injury.</li> </ul>		
<b>TANK-MIX USE RESTRICTIONS</b>		
<ol style="list-style-type: none"> <li>All use restrictions cited in <b>Section 9.1.1</b> for Callisto Xtra solo apply to tank mixes with Callisto Xtra.</li> <li>It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</li> <li>Do not make postemergence (emerged corn) applications of Callisto Xtra in a tank mix with any organophosphate or carbamate insecticide, or severe corn injury may occur.</li> <li>Do not add urea ammonium nitrate (UAN), crop oil concentrate (COC), or methylated seed oil (MSO) type adjuvants to tank mixtures with glyphosate for early postemergence application in glyphosate tolerant corn or with Liberty in glufosinate tolerant corn, or crop injury may occur.</li> <li>For tank mixes with Atrazine:</li> <li>The total amount of atrazine allowed per single application is 2 lb/A. <ol style="list-style-type: none"> <li>If the rate of Callisto Xtra applied is 20 fl oz/A, DO NOT add more than 1.5 pt/A of AAtrex (1.5 lb ai/A or equivalent).</li> <li>If the rate of Callisto Xtra applied is 24 fl oz/A, DO NOT add more than 1.4 pt/A of AAtrex 4L (1.4 lb ai/A or equivalent).</li> <li>If atrazine was applied to the corn crop prior to the application of Callisto Xtra, adjust the atrazine mixture rate such that the total amount per season does not exceed 2.5 lb ai/A.</li> </ol> </li> </ol>		

## 9.2 Grain Sorghum

### 9.2.1 Preemergence or Post-Directed Applications

Crops (including cultivars, varieties, and/or hybrids of these)		
Grain Sorghum		
Application Timing	Rate	Use Directions
Preplant Preemergence	Apply at 44 - 51 fl oz/A	Apply preplant or preemergence non-incorporated up to 21 days before planting.
	Use the higher rate for soils with fine-textured higher organic matter.	If Callisto Xtra is applied prior to sorghum planting, minimize disturbance of herbicide treated soil barrier during the planting process. If treated soil is moved, there is an increased potential for weed escapes.



		<p>If weeds are present at the time of application, add a non-ionic surfactant (NIS) at 0.25% v/v, crop oil concentrate (COC) at 1% v/v or methylated seed oil (MSO) at 1% v/v.</p> <p>In addition to NIS, COC or MSO, a spray grade ammonium sulfate (AMS) at 8.5-17 lb/100 gallons of water may also be added to the spray solution.</p> <p>Callisto Xtra may also be applied as a split application to sorghum. For a split application program, apply one half the use rate as a non-incorporated early pre-plant treatment followed by a second application at one half the use rate as a preplant or pre-emergence application prior to sorghum emergence. The total amount of Callisto Xtra applied in the split application program cannot exceed 51 fl oz/A.</p>
<b>Post-Directed</b>	<p>Apply at 20 - 24 fl oz/A</p> <p>Apply the higher rate for extended residual or control of heavy weed infestations.</p>	<p>Apply as a post-directed application when the sorghum is a minimum of 8 inches tall.</p> <p>Apply Callisto Xtra to actively growing weeds.</p> <p>Make the application by directing the spray between the crop rows and towards the base of the grain sorghum plant.</p> <p>Direct application of Callisto Xtra onto sorghum foliage can result in crop injury including temporary bleaching. If crop injury does occur, newly emerging leaves following application are typically unaffected.</p> <p>Add a non-ionic surfactant (NIS) at 0.25% v/v or a crop oil concentrate (COC) at 1% v/v. In addition to NIS or COC, a spray grade ammonium sulfate (AMS) at 8.5-17 lb/100 gallons of water may also be added to the spray solution.</p>

**For Weed Control:**

- Refer to **Section 8.0** for list of weeds controlled or partially controlled.

**Tank Mix Application Options:**

- Refer to **Section 9.2.2** for tank-mix options.

**Resistance Management:**

- Refer to **Section 3.1**.

**USE PRECAUTIONS**

- Applying Callisto Xtra less than 7 days before sorghum planting will increase the risk of crop injury, especially if irrigation or rainfall is received following application. Injury symptoms include temporary bleaching of newly emerging sorghum leaves. Applying Callisto Xtra more than 7 days (but not more than 21 days) prior to planting will reduce the risk of crop injury.
- Direct application of Callisto Xtra onto sorghum foliage can result in crop injury including temporary bleaching. If crop injury does occur, newly emerging leaves following application are typically unaffected.

**USE RESTRICTIONS**

- 1) Refer to **Section 7.1** for additional product use restrictions.
- 2) **DO NOT** apply Callisto Xtra to sorghum that is grown on coarse textured soils (e.g. sandy loam, loamy sand, sand).
- 3) **DO NOT** apply Callisto Xtra post-directed when the sorghum is greater than 12" in height.

- 4) **DO NOT** apply atrazine and propazine products to the same sorghum acre.
- 5) **Maximum Single Preemergence Application Rate:** 51 fl oz/A (1.3 lb ai/A atrazine and 0.2 lb ai/A mesotrione)
- 6) **Maximum Single Post-Directed Application Rate:** 24 fl oz/A (0.6 lb ai/A atrazine and 0.094 lb ai/A mesotrione)
- 7) **Minimum Application Interval:** 14 days
- 8) **Maximum Annual Rate:** 51 fl oz/A/year
  - a. **DO NOT** exceed 2.5 lb ai/A/year of atrazine-containing products.
  - b. **DO NOT** exceed 0.20 lb ai/A/year of mesotrione-containing products.
- 9) **DO NOT** make more than two applications prior to crop emergence.
- 10) **DO NOT** make more than one application after crop emergence.
- 11) **DO NOT** make more than two applications per year.
- 12) **DO NOT** use Callisto Xtra in the production of forage sorghum, sudangrass, sorghum-sudangrass hybrids, or dual-purpose sorghum.
- 13) **Atrazine Restrictions:**
  - a. Apply a maximum of 2.0 lb ai/A as a single preemergence application on soils that are not highly erodible or on highly erodible soils (as defined by the Natural Resource Conservation Service) if at least 30% of the soil is covered with plant residues.
  - b. Apply a maximum of 1.6 lb ai/A as a single preemergence application on highly erodible (as defined by the Natural Resource Conservation Service) soils if <30% of the surface is covered with plant residues; or 2.0 lb ai/A if only applied postemergence.
  - c. Atrazine Concentration in Callisto Xtra: For purposes of calculating total atrazine active ingredient applied, Callisto Xtra contains 3.2 lb ai atrazine plus related triazines per gallon.
- 14) **Pre-harvest interval (PHI):**
  - a. Preemergence applications: 60 days for grain or stover
  - b. Post-directed applications: 60 days for grain or stover

## 9.2.2 Grain Sorghum (Concep III Treated Only) Tank-Mix Combinations

Application	Tank-Mix Brands	Use Directions
<b>Preemergence</b>	Bicep II Magnum Bicep Lite II Magnum	Only apply these tank mixtures to Concep III treated grain sorghum or plant death will occur.
	Dual Magnum® Dual II Magnum®	Bicep II Magnum, Bicep Lite II Magnum, Dual Magnum and Dual II Magnum tank mixtures are for control of grass weeds and extended residual on small seeded broadleaf weeds.
	Sequence	Add Sequence for added burndown plus residual grass weed control.
TANK-MIX USE PRECAUTIONS		
<ul style="list-style-type: none"> <li>If sorghum seed is not properly treated with Concep III seed treatment, these tank mixture applications prior to sorghum emergence will result in crop death.</li> <li>Tank mixtures applied to highly alkaline soils or on eroded areas where calcareous subsoils are exposed may cause sorghum injury.</li> <li>Under high soil moisture conditions prior to sorghum emergence, injury may occur following the use of preplant and preemergence tank mixtures. The crop will normally outgrow this effect.</li> <li>Avoid use of tank mixtures on sorghum grown under dry mulch tillage, or injury may occur.</li> </ul>		

### TANK-MIX USE RESTRICTIONS

- 1) All use restrictions cited in **Section 9.2.1** for Callisto Xtra solo apply to tank-mixes with Callisto Xtra.
- 2) It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.
- 3) If atrazine was applied to the sorghum crop prior to the application of Callisto Xtra, adjust the atrazine mixture rate such that the total amount per season does not exceed 2.5 lb ai/A.

## 9.3 Grain Sorghum

### 9.3.1 Postemergence Broadcast Applications

Crops (including cultivars, varieties, and/or hybrids of these)		
Grain Sorghum		
Application Timing	Rate	Use Directions
Postemergence	Apply at 20 fl oz/A	<p>Apply as a postemergence broadcast treatment when the sorghum is a minimum of 4 inches tall.</p> <p>Broadcast application of Callisto Xtra onto sorghum can result in crop injury including temporary bleaching.</p> <p>To manage the crop injury risk, add only non-ionic surfactant (NIS) at 0.25% v/v.</p> <p>Avoid using additives other than NIS or tank mixtures as they can result in significant injury.</p>
<b>For Weed Control:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Resistance Management:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
USE PRECAUTIONS		
<ul style="list-style-type: none"> <li>Adding a crop oil concentrate (COC) or ammonium sulfate (AMS) to Callisto Xtra increases the risk of crop injury.</li> </ul>		
USE RESTRICTIONS		

- 1) Refer to **Section 7.1** for additional product use restrictions.
- 2) **DO NOT** apply Callisto Xtra with methylated seed oil (MSO) adjuvants or MSO blend adjuvants for postemergence applications of Callisto Xtra or severe crop injury will occur.
- 3) **DO NOT** apply Callisto Xtra to sorghum that is grown on coarse textured soils (e.g. sandy loam, loamy sand, sand).
- 4) **DO NOT** apply Callisto Xtra postemergence when the sorghum is greater than 12" in height.
- 5) **DO NOT** apply atrazine and propazine products to the same sorghum acre.
- 6) **Maximum Single Postemergence Application Rate:** 20 fl oz/A (0.5 lb ai/A atrazine and 0.078 lb ai/A mesotrione)
- 7) **Maximum Annual Rate:** 51 fl oz/A/year
  - a. **DO NOT** exceed 2.5 lb ai/A/year of atrazine-containing products.
  - b. **DO NOT** exceed 0.20 lb ai/A/year of mesotrione-containing products.
- 8) **DO NOT** make more than one application after crop emergence.
- 9) **DO NOT** make more than two applications per year.
- 10) **Atrazine Restrictions:**
  - a. Apply a maximum of 2.0 lb ai/A as a single preemergence application on soils that are not highly erodible or on highly erodible soils (as defined by the Natural Resource Conservation Service) if at least 30% of the soil is covered with plant residues.
  - b. Apply a maximum of 1.6 lb ai/A as a single preemergence application on highly erodible (as defined by the Natural Resource Conservation Service) soils if <30% of the surface is covered with plant residues; or 2.0 lb ai/A if only applied postemergence.
  - c. Atrazine concentration in Callisto Xtra: For purposes of calculating total atrazine active ingredient applied, Callisto Xtra contains 3.2 lb ai atrazine plus related per gallon.
- 11) **DO NOT** use Callisto Xtra in the production of forage sorghum, sudangrass, sorghum-sudangrass hybrids, or dual-purpose sorghum.
- 12) **Pre-harvest interval (PHI):**
  - a. Preemergence applications: 60 days for grain or stover
  - b. Post-directed applications: 60 days for grain or stover

## 9.4 Sugarcane

### 9.4.1 Preemergence and Postemergence Applications

Crops (including cultivars, varieties, and/or hybrids of these)		
Sugarcane		
Application Timing	Rate	Use Directions
<b>Preemergence</b>	<p>Apply at 48 - 61 fl oz/A</p> <p>Use the higher rate on soils with higher organic matter and/or for extended residual control.</p>	<p>Apply by ground in all labeled states but by aerial application only in Florida, Louisiana and Texas.</p> <p>Apply by ground or air after planting of plant cane but prior to crop emergence.</p> <p>Application can also be made after harvest of ratoon cane.</p> <p>If weeds are present at the time of application, add a non-ionic surfactant (NIS) at 0.25% v/v or a crop oil concentrate (COC) at 1% v/v. Using a crop oil</p>

		<p>concentrate (COC) will provide consistently better weed control than NIS.</p> <p>In addition to NIS or COC, a spray grade ammonium sulfate (AMS) at 8.5-17 lb/100 gallons of water may also be added to the spray solution.</p>
<b>Postemergence</b>	Apply at 24 fl oz/A	<p>Apply by ground in all labeled states but by aerial application only in Florida, Louisiana and Texas.</p> <p>Apply by ground or air as a broadcast over-the-top application for the control of broadleaf weeds and certain grasses. For best results, apply to actively growing weeds.</p> <p>Add either a non-ionic surfactant (NIS) at 0.25% v/v or a crop oil concentrate (COC) at 1% v/v with postemergence applications of Callisto Xtra. Using a crop oil concentrate will provide consistently better weed control than NIS.</p> <p>In addition to NIS or COC, a spray grade ammonium sulfate (AMS) at 8.5-17 lb/100 gallons of water may also be added to the spray solution.</p>

**For Weed Control:**

- Refer to **Section 8.0** for list of weeds controlled or partially controlled.

**Tank Mix Application Options:**

- Refer to **Section 9.4.2** for tank-mix options.

**Resistance Management:**

- Refer to **Section 3.1**.

**USE PRECAUTIONS**

- On soils with greater than 10% organic matter, Callisto Xtra residual activity can be affected resulting in reduced weed control.
- If irrigation or a significant rainfall does not occur within 7 days after a preemergence application, weed control may be decreased. If irrigation is available, apply ½ to 1 inch of water. If irrigation is not available, a uniform shallow cultivation is advised as soon as weeds emerge or apply an appropriately labeled herbicide to control emerged weeds.
- Temporary crop response (transient bleaching) from postemergence applications to sugarcane may occur under extreme weather conditions or when the crop is suffering from stress. Sugarcane quickly outgrows these effects and develops normally.
- Postemergence application to weeds larger than specified in **Section 8.0** will likely result in incomplete control.
- Postemergence application rates less than 24 fl oz/A may result in incomplete weed control and loss of residual control.

**USE RESTRICTIONS**

- 1) Refer to **Section 7.1** for additional product use restrictions.
- 2) **Maximum Single Preemergence Application Rate:** 61 fl oz/A (1.5 lb ai/A atrazine and 0.24 lb ai/A mesotrione)
- 3) **Maximum Single Postemergence Application Rate:** 24 fl oz/A (0.6 lb ai/A atrazine and 0.094 lb ai/A mesotrione)
- 4) **DO NOT** make more than two applications of Callisto Xtra per year.
- 5) **Minimum Application Interval:** 14 days
- 6) **Maximum Annual Rate:** 61 fl oz/A
  - a. **DO NOT** exceed 10.0 lb ai/A/year of atrazine-containing products.

- b. **DO NOT** exceed 0.334 lb ai/A/year of mesotrione-containing products.
- 7) **Preharvest Interval (PHI):**
- a. Broadcast over-the top: 100 days

## 9.4.2 Sugarcane Tank-Mix Applications

Application	Tank-Mix Brands	Use Directions
<b>Preemergence</b>	<p>AAtrex brands or other solo atrazine products</p> <p>Evik®</p> <p>TriCor® or other solo metribuzin products</p>	These tank mixtures are for improved preemergence weed control.
<b>Postemergence</b>	<p>AAtrex brands or other solo atrazine products</p> <p>Asulox® Envoke® Evik</p> <p>TriCor or other solo metribuzin products</p>	These tank mixtures are for improved spectrum and consistency of weed control.
<b>TANK-MIX USE PRECAUTIONS</b>		
<ul style="list-style-type: none"> <li>Applying AAtrex and Envoke together in a tank mixture can result in reduced grass weed control.</li> </ul>		
<b>TANK-MIX USE RESTRICTIONS</b>		
<p>1) All use restrictions cited in <b>Section 9.4.1</b> for Callisto Xtra solo apply to tank mixes with Callisto Xtra.</p> <p>2) It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p>		

# 10.0 STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or 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 must 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 a 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 a mix tank or store rinsate for later use or disposal. Drain for 10

seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**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  $\frac{1}{4}$  full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. 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.

**Container Handling [greater than 5 gallons]**

**Refillable container.** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the 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 by other procedures approved by state and local authorities.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER.**

## 11.0 CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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### CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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**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. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.



SYNGENTA 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. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions, or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## 12.0 APPENDIX

### 12.1 Tank-Mix Partner Table

Product Name	EPA Registration Number	Active Ingredient(s)
Gramoxone	100-1431 & 100-1652	paraquat
Roundup	524-549-(multiple)	glyphosate
Sequence	100-1185	glyphosate + s-metolachlor
Sharpen	7969-278	saflufenacil
Bicep II Magnum	100-817	atrazine + s-metolachlor
Bicep Lite II Magnum	100-817	atrazine + s-metolachlor
Dual II Magnum	100-829	s-metolachlor
Princep	100-526 & 100-603	simazine
AAtrex	100-497 & 100-585	atrazine
Accent Q	352-773	nicosulfuron



Basis Blend	352-854	rimsulfuron + thifensulfuron
Steadfast Q	352-774	nicosulfuron + rimsulfuron
Basagran	7969-112-(multiple)	bentazon
Moxy	9779-346	bromoxynil
Clarity	7969-137	dicamba
Status	7969-242	dicamba + Diflufenzopyr
Liberty	264-829 & 7969-448	glufosinate
Evik	100-786	ametryn
Tricor	70506-68 & 70506-103	metribuzin
Asulox	70506-139	asulam
Envoke	100-1132	trifloxysulfuron

## 12.2 [Optional Text] Callisto Xtra Use Summary Table

[Start of Optional Text]

**IMPORTANT:** The table below is a summary of the Crop Use Directions for Callisto Xtra. However, it is important for the user to read and follow the complete instructions contained within this label.

Crop or Crop Group Subgroup with examples	Max Single Application Rate of Callisto Xtra (lb ai/A)		Maximum Annual Application Rate of AI (lb ai/A/year)		Minimum Application Interval (Days)	Pre-Harvest Interval (PHI days)
	Atrazine	Mesotrione	Atrazine	Mesotrione		
Corn - (Field, Sweet, Seed, and Yellow)	1.3	0.20	2.5	0.24	14	Corn - (Field, Seed, Yellow and Silage): 60 Corn-(Sweet): 45
Grain Sorghum	1.3	0.20	2.5	0.20	14	Preemergence Applications for Grain and Stover: 60 Postemergence Applications for Grain and Stover: 60
Sugarcane	1.5	0.24	10	0.334	14	100

[End of Optional Text]

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Moxy™ is a trademark of Winfield Solutions LLC.

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<p>For non-emergency (e.g., current product information), call Syngenta Crop Protection at 1-800-334-9481.</p>
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Callisto Xtra 1359 MAS 1121 AMEND-B.APR2022-CL - ep – 6-4-25  
000100-01359.20220401B.Callisto\_Xtra.AMEND.APR2022-CL