100-1131

12/6/2002

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 6 2002

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Dan Cambell
Syngenta Crop Protection
P.O. Box 18300
Greensboro, NC 27419-8300

Dear Mr. Cambell:

Subject: Revised Labeling - Delete Aerial Application
Callisto Herbicide
EPA Registration No. 100-1131
Your Submission Dated November 18, 2002

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended is acceptable provided that you:

1. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:

- Since only the Container Disposal Statements appear on the base label, the referral statement should include a reference also to the Pesticide Storage and Disposal Directions inside the booklet.

2. Submit one (1) copy of your final printed labeling before you release the product for shipment.

A stamped copy of the labeling is enclosed for your records. The amended labeling supersedes all previously accepted ones.

If you have any questions concerning this letter, please contact Mr. James Stone at 703-305-7391.

Sincerely yours,

for Joanne I. Miller
Product Manager (23)
Herbicide Branch
Registration Division (7505C)

Enclosure

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Booklet

Callisto™
Herbicide

A Preemergence and Postemergence Herbicide for Control of Annual Broadleaf Weeds in Field Corn, Production Seed Corn, and Corn Grown for Silage

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

Contains 4 lbs. of active ingredient mesotrione per gallon.

ACCEPTED
with COMMENTS
In EPA Letter Dated:
DEC 6 2002
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 100-1131

KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements and directions for use inside booklet.

EPA Reg No. 100-1131

EPA Est. 100-NE-001

SCP 1131A AMD DRAFT 1

1 gallon
U.S. Standard Measure

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or docto. for treatment advice
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give aritficial respiration, preferably mouth-to mouth, if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
HOTLINE NUMBER For 24-Hour Medical Emergency Assistance (Human or Animal), or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) Call **1-800-888-8372**	

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

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

Personal Protective Equipment

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

Applicators and other handlers must wear:

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

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

Engineering Control Statements

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

User Safety Recommendations

Users should:

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

Environmental Hazards

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

Surface Water Advisory

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

Physical And Chemical Hazards

Do not use or store near heat or open flame.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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

The Directions for Use of this product should 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, Inc. or Seller. All such risks shall be assumed by Buyer and User, and 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. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and Buyer and User assume the risk of any such use. SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall SYNGENTA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **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 limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

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DIRECTIONS FOR USE

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. 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 – Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC), or viton)

STORAGE AND DISPOSAL

Prohibitions

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Keep away from heat and flame.

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.

Pesticide Disposal

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

Container Disposal

Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

GENERAL INFORMATION

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

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

Weeds Controlled

Table 1. Weeds Controlled With Preemergence Applications of Callisto

Common Name	Scientific Name	6-7.7 fl. ozs./A When Used Alone or Applied With a Preemergence Grass Herbicide	Controlled by 5-6 fl. ozs./A Used With an Atrazine Premix
Amaranth, palmer	*Amaranthus palmeri*	C	C
Amaranth, spiny	*Amaranthus spinosus*	C	C
Broadleaf signalgrass	*Brachiaria platyphylla*	C	C
Buffalobur	*Solanum rostratum*	C	C
Carpetweed	*Mollugo verticillata*	C	C
Chickweed, common	*Stellaria media*	C	C
Cocklebur, common	*Xanthium strumarium*	PC	C
Crabgrass, large	*Digitaria sanguinalis*	C[1]	C
Galinsoga	*Galinsoga parviflora*	C	C
Jimsonweed	*Datura stramonium*	C	C
Kochia	*Kochia scoparia*	PC	C
Lambsquarters, common	*Chenopodium album*	C	C
Morningglory, entireleaf; ivyleaf	*Ipomoea hederacea*	PC	C
Morningglory, pitted	*Ipomoea lacunosa*	PC	C
Nightshade, eastern black	*Solanum ptycanthum*	C	C
Nightshade, hairy	*Solanum sarrachoides*	C	C
Pigweed, redroot	*Amaranthus retroflexus*	C	C
Pigweed, smooth	*Amaranthus hybridus*	C	C
Pigweed, tumble	*Amaranthus albus*	C	C
Ragweed, common	*Ambrosia artemisiifolia*	C	C
Ragweed, giant	*Ambrosia trifida*	PC	C
Smartweed, ladysthumb	*Polygonum persicaria*	C	C
Smartweed, pale	*Polygonum lapathifolium*	C	C
Smartweed, Pennsylvania	*Polygonum pensylvanicum*	C	C
Sunflower, common	*Helianthus annuus*	C	C
Velvetleaf	*Abutilon theophrasti*	C	C
Waterhemp, common	*Amaranthus rudis*	C	C
Waterhemp, tall	*Amaranthus tuberculatus*	C	C

C = Control PC = Partial Control C[1] = Partial Control When Callisto is Applied Alone

Table 2. Weeds Controlled with Postemergence Applications of Callisto

		3 fl. ozs./A Plus COC Plus UAN or AMS	3 fl. ozs./A Plus ½ pt. (0.25 lb a.i./A) Atrazine 4L/A per or Equivalent Plus COC Plus UAN or AMS	3 fl. ozs./A Plus ½ pt. (0.25 lb a.i./A) Atrazine 4L/A or Equivalent Plus COC Plus UAN or AMS
Common Name	**Scientific Name**	**Apply to weeds <5 inches tall**		**Apply to weeds 5-10 inches tall**
Amaranth, palmer	*Amaranthus palmeri*	C	C	C
Amaranth, spiny	*Amaranthus spinosus*	C	C	C
Atriplex	*Chenopodium orach*	C	C	C
Broadleaf signalgrass	*Brachiaria platphylla*	C	C	PC
Buckwheat, wild	*Polygonum convolvulus*	PC	PC	PC
Buffalobur	*Solanum rostratium*	C	C	C
Carpetweed	*Mollugo verticillata*	C	C	C
Chickweed, common	*Stellaria media*	C	C	C
Cocklebur, common	*Xanthium strumarium*	C	C	C
Crabgrass, large	*Digitaria sanguinalis*	C[1]	C[1]	PC
Dandelion	*Taraxacum officinale*	NC	PC	PC
Galinsoga	*Galinsoga parviflora*	C	C	C
Hemp	*Cannabis sativa*	C	C	C
Horse nettle	*Solanum carolinense*	C	C	C
Horseweed/Marestail	*Conyza canadensis*	PC	C	PC
Jimsonweed	*Datura stramonium*	C	C	C
Knotweed, prostrate	*Polygonum aviculare*	PC	PC	PC
Kochia	*Kochia scoparia*	PC[1]	C[2]	PC
Lambsquarters, common	*Chenopodium album*	C	C	C
Mallow, Venice	*Hibiscus trionum*	NC	C	PC
Morningglory, entireleaf; ivyleaf	*Ipomoea hederacea*	PC	C	PC
Morningglory, pitted	*Ipomoea lacunosa*	PC	C	PC
Mustard, wild	*Brassica kaber*	C	C	C
Nightshade, black	*Solanum nigrum*	C	C	C

Nightshade, eastern black	*Solanum ptycanthum*	C	C	C
Nightshade, hairy	*Solanum sarrachoides*	C	C	C
Pigweed, redroot	*Amaranthus retroflexus*	C	C	C
Pigweed, smooth	*Amaranthus hybridus*	C	C	C
Pigweed, tumble	*Amaranthus albus*	C	C	C
Potatoes, volunteer	*Solanum spp.*	C	C	C
Pusley, Florida	*Richardia scabra*	C[1]	C[1]	PC
Ragweed, common	*Ambrosia artemisiifolia*	PC	C	C
Ragweed, giant	*Ambrosia trifida*	C	C	C
Sesbania, hemp	*Sesbania exaltata*	C	C	C
Sida, prickly (teaweed)	*Sida spinosa*	NC	C[1]	PC
Smartweed, ladysthumb	*Polygonum persicaria*	C	C	C
Smartweed, pale	*Polygonum lapathifolium*	C	C	C
Smartweed, Pennsylvania	*Polygonum pensylvanicum*	C	C	C
Sunflower, common	*Helianthus annuus*	C	C	C
Thistle, Canada	*Circium arvense*	NC	C	PC
Velvetleaf	*Abutilon theophrasti*	C	C	C
Waterhemp, common	*Amaranthus rudis*	C	C	C
Waterhemp, tall	*Amaranthus tuberculatus*	C	C	C

[1] Apply before weed exceeds 2 inches in height.
[2] For control add atrazine at 1 pt. (0.5 lb.) per acre.

C = Control PC = Partial Control NC = No Control

Rotational Crops

Corn may be replanted immediately. Small grains may be planted 120 days after application. Soybeans, sorghum, cotton, potatoes, sunflowers, canola, tobacco, alfalfa, and sweet corn can be planted back the following season but not less than 10 months after the last Callisto application. Sugar beets, peas, dry beans, snap beans, cucurbits, red clover, ~~alfalfa~~ and all other rotational crops may be replanted 18 months after application of Callisto. Planting at shorter than recommended intervals may result in injury to the rotational crop.

General Use Precautions

Callisto can be used preemergence (alone or with listed tank mix herbicides) and/or postemergence (alone or with listed tank mix herbicides) in field corn, production seed corn, and corn grown for silage. Do not apply to popcorn, sweet corn, or ornamental (Indian) corn.

Avoid drift onto adjacent crops.

Severe corn injury may occur if Callisto is applied postemergence to corn crops that were treated with Counter or Lorsban, which may result in corn crop yield loss.

Severe corn injury may occur if Callisto is applied foliar postemergence in a tank mix with any organophosphate or carbamate insecticide which may result in corn crop yield loss.

Severe corn injury may occur if any organophosphate or carbamate insecticide is applied foliar postemergence within 7 days before or 7 days after Callisto application, which may result in corn crop yield loss.
Do not cultivate corn within 7 days before or after a Callisto application.

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

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

Do not apply with suspension fertilizers as the carrier.

Do not apply Callisto postemergence in a tank mix with emulsifiable concentrate grass herbicides or injury may occur.

Do not use aerial application to apply Callisto herbicide.

Callisto may be applied with pyrethoid type insecticides like Warrior®.

Resistance Management

Naturally occurring biotypes of certain broadleaf weed species with resistance to triazines or ALS herbicides are known to exist. However, no known resistance to Callisto exists, and there are no known instances of cross resistance between Callisto (HPPD inhibitor) and other classes of herbicides, or modes of action. Performance of Callisto is not affected by the presence of biotypes resistant to triazines or ALS inhibitor herbicides.

To help prevent the development of resistance to Callisto herbicide, do not apply Callisto after mestorione containing preemergence herbicides have been applied, i.e. Lumax™ or Camix™. No more than 0.24 lb. of mesotrione active ingredient should be applied per acre per year (equivalent of 7.7 fl. oz. per acre per year of Callisto). If additional herbicide must be applied, it is recommended that a different mode of action be used, i.e., other than an HPPD inhibitor.

Integrated Pest (Weed) Management

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

Spray Drift

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

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

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

Information on Droplet Size

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

Controlling Droplet Size

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

Sensitive Areas

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

~~The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops:~~

~~– The distance of the outermost nozzles on the boom must not exceed ¾ the length of the wingspan or rotor.~~

~~– Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45°.~~

~~– If more stringent state regulations are present, they must be observed.~~

~~– The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory** section.~~

APPLICATION PROCEDURES

PREEMERGENCE

Ground Spray Equipment

Spray nozzles should be uniformly spaced, the same size and type, and should provide accurate and uniform application. Use spray nozzles that provide medium to coarse droplet size to provide good coverage and avoid drift. Apply in a spray volume of 10-80 gals./A using water or liquid fertilizer (excluding suspension fertilizers) as the carrier. Use a pump that can maintain a pressure of at least 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures may be used with extended range or drift reduction nozzles.

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

POSTEMERGENCE

Ground Spray Equipment

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

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

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

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

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

~~**Aerial Spray Equipment**~~

~~Apply Callisto in a minimum spray volume of 5 gals. of water per acre. When foliage is dense, higher water volumes should be used. Avoid application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur. Use sufficient spray~~

volume to ensure complete dispersion of Callisto in the spray tank when mixing and during applications to target broadleaf weeds.

Select nozzles and boom configurations that produce medium-coarse droplets (250-400 microns VMD). Make applications at the maximum spray height of 10 ft. above the crop with low drift nozzles at a maximum pressure of 40 psi. Boom length should be a maximum of ¾ of the wingspan of the aircraft when fixed-wing aircraft are used. Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45°. Use swath adjustment to manage wind displacement of the spray. DO NOT spray when wind speed exceeds 10 mph to help assure accurate application within the target area.

SPRAY EQUIPMENT

Aerial Drift Reduction Advisory

(This section is advisory in nature and does not supersede the mandatory label requirements.)

If more stringent state regulations are present, they must be observed.

Information on Droplet Size

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

Controlling Droplet Size

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

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

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

- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than ¾ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

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

Swath Adjustment

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

Wind

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

Temperature and Humidity

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

Temperature Inversions

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

Sensitive Areas

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

Cleaning Equipment After Callisto Application

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

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

MIXING PROCEDURES

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

Always refer to labels of other pesticide products for mixing directions and precautions which may differ from those outlined here. Use in accordance with the most restrictive of label limitations and precautions. No label dosage rates should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. Do not tank mix Callisto with any other insecticide, fungicide, fertilizer solution, or adjuvant not recommended on the label without testing compatibility, as poor mixing may result. It is recommended that the compatibility of any tank mix combination be tested on a small scale such as a jar test before actual tank mixing.

Follow the mixing instructions for adding Callisto to the spray tank:

1. Only use sprayers in good running condition with good agitation. Ensure the sprayer is cleaned according to instructions on label of the product used prior to Callisto. For postemergence applications, use only clean water for the spray solution. Ensure that all in-line strainer and nozzle screens in the sprayer are 50-mesh or coarser. Screens finer than 50-mesh should not be used.

2. Liquid fertilizer (excluding suspension fertilizers) may be used as the carrier for preemergence applications.

3. Begin to fill sprayer tank or premix tank with clean water and engage agitator. Agitation must be continued throughout the entire mixing and spraying procedure.

4. When the sprayer or premix tank is half full of water, add Callisto slowly and agitate unitl completely dispersed. Wait at least 1 minute after the last of the Callisto has been added to the tank to allow for complete dispersion. A longer agitation period may be required to disperse Callisto when using cold water from sources such as deep drilled wells.

5. If tank mixing, add the tank mix product next.

6. Finally, add adjuvant and UAN or AMS, if needed, and then continue to fill tank to desired level with water.

CROP USE DIRECTIONS

Callisto may be used on field corn, production seed corn, and corn grown for silage. Refer to seed company recommendations for use on inbred lines. Do not apply to popcorn, sweet corn, or ornamental (Indian) corn.

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

Do not apply more than a total of ~~10.7~~ 7.7 fl. ozs. (0.~~34~~24 lb. mesotrione active ingredient) of Callisto per acre per season. Do not apply more than 0.24 lb. of mesotrione active ingredient per acre per year as a combined total from all mesotrione containing products, including Callisto, Lumax, and Camix. ~~Do not exceed 7.7 fl. ozs. (0.24 lb. a.i./A) preemergence and 6.0 fl. ozs. (0.188 lb. a.i./A) postemergence.~~ Do not make more than 2 applications of Callisto per season. Do not exceed 3.0 fl. ozs. (0.094 lb. a.i./A) in a single postemergence application. Do not make the second application of Callisto within 14 days of the first application.

Apply Callisto for control of broadleaf weeds listed in Tables 1 and 2. Corn may be treated up to 30 inches tall or up to the 8-leaf stage of corn growth. Do not harvest forage, grain, or stover within 45 days after application.

FIELD CORN, PRODUCTION SEED CORN, CORN GROWN FOR SILAGE

Callisto Used Alone – Preemergence Rates

Apply Callisto alone at 6.0-7.7 fl. ozs./A (0.188-0.24 lb. a.i./A) by ground sprayers in a spray

volume of 10-30 gals. of water (up to 80 gals. if applied with liquid fertilizers) per acre for broadleaf weed control. For a list of weeds controlled, refer to Table 1. Callisto may be tank mixed with preemergence grass herbicides for grass control. Refer to the tank mix section for a list of partners.

Callisto Used Alone – Postemergence Rates

Apply Callisto at 3.0 fl. ozs./A per application. For postemergence applications of Callisto, add crop oil concentrate (COC) to the spray solution at a rate of 1.0 gal./100 gals. of water (1.0% v/v). **Do not use Methylated Seed Oil (MSO) or MSO blend adjuvants.**

Always add spray grade UAN (28-0-0) to the spray solution at a rate of 2.5% (v/v) or AMS at 8.5 lbs./100 gals. spray solution. For best results, apply Callisto to actively growing weeds. For a list of weeds controlled see Table 2. Susceptible weeds which emerge soon after application of Callisto may be controlled after they absorb the herbicide from the soil. Callisto will not control most grass weeds.

Two postemergence applications of Callisto may be made with the following restrictions.

- Only one postemergence application may be made if Callisto has been applied preemergence. Do not exceed a total of two applications per season. Do not exceed a total of ~~10.7~~ 7.7 fl. ozs./A (0.~~34~~24 lb. a.i./A) of Callisto per season.
- Do not make the second application within 14 days of the first application.
- Application of Callisto at rates less than 3.0 fl. ozs./A (0.094 lb. a.i./A) postemergence may result in incomplete weed control and loss of residual control.
- Do not exceed a total of 6.0 fl. ozs./A (0.19 lb. a.i./A) for the two postemergence applications.
- Do not apply more than 0.24 lb. of mesotrione active ingredient per acre per year as a combined total from all mesotrione containing products, including Callisto, Lumax, and Camix.
- Corn may be treated up to 30 inches tall or up to the 8-leaf stage of corn growth. Do not harvest forage, grain, or stover within 45 days after application.

CALLISTO COMBINATIONS – PREEMERGENCE

Tank Mixed with Axiom®, Degree™, Doubleplay®, Dual II®, Dual II MAGNUM®, Dual MAGNUM®, Frontier®, Harness®, Outlook™, Surpass® EC, Prowl®, or Topnotch® – Preemergence

Callisto at a rate of 6.0-7.7 fl. ozs./A (see Table 1) can be tank mixed with Axiom, Degree, Doubleplay, Dual II, Dual II MAGNUM, Dual MAGNUM, Frontier, Harness, Outlook, Surpass EC, Prowl, or Topnotch. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

Tank Mixed with AAtrex®, Bicep®, Bicep Lite II®, Bicep II MAGNUM®, Bicep Lite II MAGNUM®, Degree Xtra™, Guardsman®, Guardsman Max® Fultime™, Harness Xtra®, or LeadOff™ – Preemergence

Callisto at a rate of 5.0-6.0 fl. ozs./A (see Table 1) can be tank mixed with AAtrex, Bicep, Bicep Lite II, Bicep II MAGNUM, Bicep Lite II Magnum, Degree Xtra, Guardsman, Guardsman Max, Fultime, Harness Xtra, or LeadOff. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

Used in Combination with Preemergence Burndown Herbicides: Tank Mixed with Gramoxone® Extra, Gramoxone Max, Roundup Ultra™, Roundup UltraMax™, Touchdown®, and/or 2,4-D – Preemergence

For improved broadleaf weed control with limited residual control prior to planting corn, apply Callisto at 3.0 fl.ozs./A by ground sprayers in tank mixes with Gramoxone Extra, Gramoxone Max, Roundup Ultra, Roundup Ultra Max, Touchdown, and/or 2,4-D. For greater residual control, use 6.0-7.7 ozs./A of Callisto (see Table 1) with the above products. Use the adjuvant system recommended by the burndown herbicide. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

CALLISTO COMBINATIONS – POSTEMERGENCE

Application of Callisto at rates less than 0.094 lb. a.i./A (3.0 fl. ozs.) postemergence may result in incomplete weed control and loss of residual control. Syngenta advises against the use of rates less than 0.094 lbs. a.i./A (3.0 fl. ozs.) postemergence with all tank mix partners.

Tank Mixed with AAtrex 4L or AAtrex Nine-O - Postemergence (see Table 2)

In these tank mixes, apply Callisto at 3.0 fl. ozs./A. If weeds are more than 5 inches tall, or for improved control of common ragweed, Florida pusley, kochia, large crabgrass, morningglory spp., palmer amaranth, prickly sida, prostrate knotweed, Venice mallow, and wild buckwheat, or for faster weed control, add AAtrex 4L or AAtrex Nine-O at a minimum rate of 0.5-1.0 pt./A (or equivalent rate of other formulations of atrazine). **Do not use any atrazine formulation if corn is greater than 12 inches tall.**

For best results, apply Callisto to actively growing weeds. Susceptible weeds which emerge soon after application may be controlled after they absorb the herbicide from the soil. Callisto will not control most grass weeds. For postemergence applications, add crop oil concentrate (COC) to the spray solution at a rate of 1.0 gal./100 gals. of water (1% v/v). Always add spray grade UAN (28-0-0) at a rate of 2.5% (v/v) or AMS (8.5 lbs./100 gals. spray solution) to the spray solution. **Do not use Methylated Seed Oil (MSO) or MSO blend adjuvants.** Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

Tank Mixed with Liberty® and Liberty ATZ – Postemergence

Callisto at a rate of 3.0 fl. ozs./A (see Table 2) can be tank mixed with Liberty or Liberty ATZ. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

Use tank mixes with Liberty only on seed designated as LibertyLink® or warranted by Aventis CropScience as being tolerant to Liberty herbicide. Failure to follow these directions will lead to severe crop injury. Follow all other directions for use, including adjuvants, as specified on the

Liberty product label. However, do not use crop oil concentrate (COC) as an adjuvant when tank mixing Callisto with Liberty or LIberty ATZ.

Tank Mixed with Basagran® – Postemergence

Callisto at a rate of 3.0 fl. ozs./A (see Table 2) can be tank mixed with Basagran. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

For non-emergency (e.g., current product information), call
Syngenta Crop Protection at 1-800-334-9481.

Syngenta Crop Protection, Inc.
Greensboro, NC 27409
www.syngenta-us.com

SCP 1131A AMD DRAFT 1

Base Label
(1 gallon)

Callisto™
Herbicide

A Preemergence and Postemergence Herbicide for Control of Annual Broadleaf Weeds in Field Corn, Production Seed Corn, and Corn Grown for Silage

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

Contains 4 lbs. of active ingredient mesotrione per gallon.

KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements and directions for use inside booklet.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Container Disposal

Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

EPA Reg No. 100-1131
EPA Est.100-NE-001

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Syngenta Crop Protection, Inc.
Greensboro, North Carolina 27409
www.syngenta-us.com

SCP 1131A AMD DRAFT 1

1 gallon
U.S. Standard Measure

Precautionary Statement Statements

Hazards to Humans and Domestic Animals

CAUTION

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

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give aritficial respiration, preferably mouth-to mouth, if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
HOTLINE NUMBER For 24-Hour Medical Emergency Assistance (Human or Animal), or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) Call **1-800-888-8372**	

Environmental Hazards

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

Surface Water Advisory

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

Physical And Chemical Hazards

Do not use or store near heat or open flame.