

MISCANTHUS AND OTHER NON-FOOD PERENNIAL BIOENERGY CROPS

General Information

PRODUCT INFORMATION

This product is recommended for control of yellow nutsedge and many annual grasses and broadleaf weeds listed in the "WEEDS CONTROLLED" section of the label. This product alone will not control emerged seedlings. This product may be applied either as a surface application before or after planting or after crop emergence. This product may also be shallowly incorporated prior to planting to blend the herbicide treatment into the upper 1 inch of soil. Except for minimum or conservation tillage systems, the seedbed should be fine, firm and free of clods and trash.

Read and carefully observe cautionary statements and all other information appearing on the labeling of all products used in mixtures and sequential products. Use according to the most restrictive label directions for each product in the mixture.

NOTE: Use this product for weed control in corn and grain sorghum only. CORN (ALL TYPES INCLUDING SWEET CORN), MILO (SORGHUM), SOYBEANS, WHEAT OR TOBACCO CAN BE PLANTED THE YEAR FOLLOWING THE USE OF THIS PRODUCT. IF SOYBEANS ARE TO BE PLANTED THE FOLLOWING YEAR, THERE IS THE POSSIBILITY OF CROP INJURY DUE TO CARRYOVER OF ATRAZINE.

Use Restrictions

This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the ground water is shallow, may result in ground water contamination. On the following soil types, do not apply this product within 50 feet of any well where the depth to ground water is 30 feet or less: sands with less than 3 percent organic matter; loamy sands with less than 2 percent organic matter; or sandy loams with less than 1 percent organic matter. See the figure for additional clarification.

Atrazine can travel (seep or leach) through soil and can enter ground water which maybe used as drinking water. Atrazine has been found in ground water. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (ground water) 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 ground water.

This product must not be mixed or 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 spill or equipment leaks, container or equipment rinse or washwater, 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 percent 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 percent 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.

States may have in effect additional requirements regarding well-head setbacks and operational area containment.

This product must not be mixed or loaded within 50 feet of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs. This product must not be applied 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.

Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher setbacks), which are different from the label, the more restrictive/protective requirements apply. Do not flood irrigate to apply or incorporate this product. Product must be used in a manner that will prevent back siphoning into wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates. Do not apply this product through any type of irrigation system, unless otherwise directed by approved supplemental labeling in possession of the user at the time of application.

Disposal of excess pesticide, spray mixtures or rinsate should be according to label use instructions or according to the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA regional office.

Do not apply under conditions that favor runoff or wind erosion of soil containing this product to non-target areas. To prevent off-site movement due to runoff or wind erosion:

- Avoid treating powdery dry or light sandy 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 or frozen or snow covered soils.

- Do not use tail-water from the first flood or furrow irrigation of treated fields to treat non-target crops unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.
- Do not apply this product using aerial application equipment, unless otherwise directed by approved supplemental labeling in possession of the user at the time of application.
- Do not apply when wind conditions favor drift to non-target sites. To minimize spray drift to non-target areas:
 - Use low pressure application equipment capable of producing a large droplet spray.

Do not use nozzles that produce a fine droplet spray. Minimize drift by using sufficient spray volume to ensure adequate coverage with large droplet size sprays.

- Keep ground driven spray boom as low as possible above the target surface.
- Make application when the wind velocity favors on-target product deposition (approximately 3 to 10 miles per hour). Do not apply when wind velocity exceeds 15 miles per hour. Avoid application when gusts approach 15 miles per hour.
- Low humidity and high temperatures increase the likelihood of spray drift to sensitive areas. Avoid spraying during conditions of low humidity and/or high temperatures. Do not apply during inversion conditions.

Use of this product not consistent with the label may result in injury to persons, animals or crops, or other unintended consequences.

For field corn forage use, allow 60-day preharvest interval. For grain sorghum forage use, allow 60-day preharvest interval.

Flush sprayer with clean water after use.

WEED RESISTANCE MANAGEMENT

Atrazine and acetochlor, the active ingredients in this product, are Group 5 and Group 15 herbicides, respectively, based on the mode of action classification system of the Weed Science Society of America. Any weed population can contain plants naturally resistant to Group 5 or Group 15 herbicides. Weed species resistant

to Group 5 or Group 15 herbicides may be effectively managed utilizing another herbicide from a different Group, or by using other cultural or mechanical practices.

General principles of herbicide resistance management

1. Apply integrated weed management practices. Use multiple herbicide modes-of-action with overlapping weed spectrums in rotation, sequences, or mixtures.
2. Use the full specified herbicide rate and proper application timing for the hardest to control weed species present in the field.
3. Scout fields after herbicide application to ensure control has been achieved. Avoid allowing weeds to reproduce by seed or to proliferate vegetatively.
4. Monitor site and clean equipment between sites.

For annual cropping situations also consider the following:

- Start with a clean field and control weeds early by using a burndown treatment or tillage in combination with a preemergence residual herbicide as appropriate.
- Use cultural practices such as cultivation and crop rotation, where appropriate.
- Use good agronomic principles that enhance crop competitiveness
- Use new commercial seed that is as free of weed seed as possible.

APPLICATION SYSTEMS

Ground Broadcast Treatment

Apply this product and the labeled tank mixtures in 10 or more gallons of solution per acre using broadcast boom equipment. The carrier may be either water or sprayable fluid fertilizer as specified for the crop to be treated in the "DIRECTIONS FOR USE" section of the label. Do not apply during periods of gusty winds, when winds are in excess of 15 miles per hour or when other conditions favoring drift exist.

Ground Band Treatment

Apply a broadcast equivalent rate and volume per acre.

APPLICATION TIMING AND METHODS

Early Preplant Surface Application

This product and some labeled tank mixtures of this product may be applied in no-till and other conservation tillage systems before weeds emerge and up to 45 days before planting field corn or silage corn. Split applications can be made 30 to 45 days prior to planting with 60 percent of the specified broadcast rate applied initially and the remaining 40 percent applied at planting. Applications made less than 30 days prior to planting can be made either as a split or as a single application. If weeds are present at the time of application, apply this product in tank mixture with an appropriate contact herbicide. Observe directions for use, precautions and restrictions on the label of the contact herbicide. During the planting operation, be careful not to move untreated soil to the surface or move treated soil out of the row, as weed control may be reduced.

Preplant Incorporation Application

This product and many of the labeled tank mixtures may be mixed into the upper 1-inch of soil using shallow incorporation equipment any time within 14 days prior to planting. Apply the specified treatment rate to the soil surface as a broadcast application. Either existing soil moisture or subsequent precipitation or irrigation is required to bring incorporated herbicide treatments into contact with germinating weed seedlings. Irrigation within 10 days following application may improve weed control. If weeds emerge after treatment, rotary hoe or shallowly cultivate immediately to improve performance but only cultivate if rainfall or irrigation does not occur within 10 to 14 days after application.

Preemergence Surface Application

This product and all labeled tank mixtures may be applied to the soil surface after planting and prior to either crop or weed emergence. Apply within 5 days of last preplant tillage. If weeds emerge after treatment, or if treatment is applied more than 5 days after last preplant tillage, rotary hoe or shallowly cultivate immediately to improve performance. Precipitation or overhead sprinkler irrigation is required after application to move the herbicide treatment into the weed germination zone. The amount of precipitation or overhead sprinkler irrigation required depends on existing soil mixture, soil type and percent organic matter content, but 1/2 to 3/4

inch is normally adequate. Performance is improved when moisture is received within 7 days after application and prior to weed emergence. High intensity or excessive rainfall or excessive irrigation after application may reduce control.

Postemergence Surface Application

This product and certain tank mixtures may be applied postemergence until corn reaches 11 inches in height or grain sorghum reaches 11 inches (5 to 6 leaf stage) in height. Application must be made prior to weed seedling emergence or in a tank mixture that controls emerged weeds. Read and follow all restrictions and directions on tank mix product labels. Refer to the specific treatment intended in the "DIRECTIONS FOR USE" section of the label to determine if postemergence applications to corn or grain sorghum are recommended and determine the proper weed and crop growth stage limitations.

Precipitation or overhead sprinkler irrigation is required after application to move the herbicide treatment into the weed germination zone to control weeds that have not emerged. The amount of precipitation or irrigation required depends on existing soil moisture, soil type and percent organic matter content, but 1/2 to 3/4 inch is normally adequate. If weeds emerge after treatment, rotary hoe or shallowly cultivate to improve performance.

Do not apply postemergence to sweet corn.

NOTE: Postemergence application of this product in liquid fertilizer carriers can result in crop injury. Some leaf burn may occur on corn. DO NOT apply if air temperatures are expected to reach 85 degrees F within 24 hours after application. Surfactants, crop oil or other additives are not recommended unless specified in the tank mix instructions. If applying postemergence in liquid fertilizer carriers, APPLY TO FIELD CORN ONLY.

Cultivation Information

Delay cultivation after application for as long as possible unless weeds or grasses emerge. Shallowly cultivate or rotary hoe immediately if weeds or grasses emerge. If cultivation is necessary because of soil crusting or compaction, set equipment shallow and minimize lateral soil movement to avoid dilution or displacement of the herbicide treatment. If a band application is used and weeds have emerged in the treated band, set cultivator to throw soil into the row covering the band.

Limitations, Restrictions, and Exceptions

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For weed control in Miscanthus and other non-food perennial bioenergy crops, apply Degree Xtra Herbicide at 3.3-4.4 pints per acre after the crop has been transplanted or after fully emerged to a height of at least 2-3 inches.

Up to two applications of Degree Xtra Herbicide may be made each year. The total amount of this product applied each year must not exceed 8.8 pints per acre.

RESTRICTIONS:

Do not allow the Miscanthus or other non-food perennial bioenergy crop treated with Degree Xtra Herbicide to be grazed or used as animal feed.

Method

[Broadcast/Foliar Ground](#)

Rates

[field_rates 0](#)

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Restricted Entry Interval

12 hours

Timings

[Postemergence \(Crop\)](#)

[Transplant](#)