# Zurax L

**GROUP 4 HERBICIDE**

**Herbicide For Use on Wheat, Sorghum, and Rice**

| **ACTIVE INGREDIENT:** | **% BY WT.** |
|---|---|
| Dimethylamine salt of quinclorac: 3,7-dichloro-8-quinolinecarboxylic acid | 17.79% |
| **OTHER INGREDIENTS:** | 82.21% |
| **TOTAL:** | 100.00% |

**Equivalent to:**
1.50 lbs quinclorac: 3,7-dichloro-8-quinolinecarboxylic acid equivalent per gallon

**EPA Reg. No. 66222-283** **EPA Est. No. 37429-GA-001[BT]; 37429-GA-002[BO]; 37429-GA-003[BV]**
Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

## KEEP OUT OF REACH OF CHILDREN

## CAUTION / PRECAUCIÓN

Si usted no entiende la estiqueta, busque a alguien para que se la explique a usted en detalle. (If you **DO NOT** understand the label, find someone to explain it to you in detail.)

See inside label booklet for First Aid, additional Precautionary Statements, Directions for Use and Storage and Disposal Instructions.

**How can we help?**
**1-866-406-6262**

**HERBICIDE**

ADAMA
ESSENTIALS

| FIRST AID | |
|---|---|
| **IF SWALLOWED:** | • Call poison control center or doctor immediately for treatment advice.<br>• Have person sip a glass of water if able to swallow.<br>• **DO NOT** induce vomiting unless told to do so by the poison control center or doctor.<br>• **DO NOT** give anything by mouth to an unconscious person. |
| **IF IN SKIN OR CLOTHING:** | • Take off contaminated clothing.<br>• Rinse skin immediately with plenty of water for 15 to 20 minutes.<br>• Call a poison control center or doctor for treatment advice. |
| **IF IN EYES:** | • Hold eye open and rinse slowly and gently with water for 15-20 minutes.<br>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.<br>• Call a poison control center or doctor for treatment advice. |
| **IF INHALED:** | • Move person to fresh air.<br>• If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth to mouth, if possible.<br>• Call a poison control center or doctor for further treatment advice. |
| **HOT LINE NUMBER** | |
| Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-877-250-9291 for emergency medical treatment information. | |

In case of spills, fire, leaks or accident, call INFOTRAC at 1-800-535-5053.

## PRECAUTIONARY STATEMENTS
## HAZARDS TO HUMANS AND DOMESTIC ANIMALS
## CAUTION

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

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of butyl rubber ≥ 14 mils, natural rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, or nitrile rubber ≥ 14 mils
- Shoes plus socks

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. Keep and wash PPE separately from other laundry.

### USER SAFETY RECOMMENDATIONS

**Users should:**

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

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

### ENVIRONMENTAL HAZARDS

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

**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** contaminate water by cleaning of equipment or disposal of rinsate.

For terrestrial uses **DO NOT** apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark, except as specified on this label for use on rice. Keep out of lakes, ponds, and streams. **DO NOT** contaminate water by cleaning of equipment or disposal of rinsate.

# DIRECTIONS FOR USE

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

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

**AGRICULTURAL USE REQUIREMENTS**

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

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

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

- Coveralls
- Chemical-resistant gloves made of butyl rubber ≥ 14 mils, natural rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, or nitrile rubber ≥ 14 mils
- Shoes plus socks

## SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements **DO NOT** apply to forestry applications, public health uses, or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed ¾ the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees. Where states have more stringent regulations, they must be observed.

The applicator should be familiar with and take into account the information covered in the aerial drift reduction advisory information presented below.

### Importance of Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See **Wind**, **Temperature and Humidity**, and **Temperature Inversion** sections of this label).

### Controlling Droplet Size

- **Volume**-Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets. Apply Zurax L in 3-10 gallons of spray volume per acre.
- **Pressure**-Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. WHEN HIGHER FLOW RATES ARE NEEDED, USE HIGHER FLOW RATE NOZZLES INSTEAD OF INCREASING PRESSURE. Use a maximum of 40 psi (measured at the boom, not at the pump or in the line).
- **Number of Nozzles**-Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation**-Orienting nozzles so that the spray is released backward (the downward angle of the nozzles on fixed wing aircraft should not be greater than 20°) or parallel to the airstream on helicopters, will produce larger droplets than other orientations. 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. Some nozzle examples are CP Lund or flat fans with angles of 25°-65°. Solid stream nozzles oriented straight back produce larger droplets than other nozzle types. If using nozzle screens, **DO NOT** use screens finer than the 50-mesh size as nozzle plugging is possible.

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

**Swath Adjustment**

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

**Wind**

Drift potential is lowest between wind speeds of 2-10 mph. Factors to be considered include droplet size and equipment type determine drift potential at any given speed, avoid application below 2 mph due to variable wind direction and high inversion potential. **DO NOT** apply Zurax L when wind is blowing more than 10 mph. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect 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 wind conditions are both hot and dry.

**Temperature Inversions**

Applications may 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**

This pesticide may 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).

**FOR WEED CONTROL IN PREPLANT WHEAT (SEE USE DIRECTIONS FOR GEOGRAPHIC LIMITATIONS), PREPLANT AND IN-CROP SORGHUM, AND NONCROP AREAS IN THE FOLLOWING STATES: CO, DE, ID, IL, KS, MD, MN, MO, MT, ND, NE, NM, NV, OK, OR, PA, SD, UT, WA, WY, VA, AND DESIGNATED COUNTIES OF TX- INFORMATION**

Zurax L is a dry flowable formulation to be diluted with water prior to application using common agricultural spray equipment. When used as directed, Zurax L will provide suppression or control of weed species listed in **Table 1**.

Zurax L is a systemic herbicide. The weed foliage and roots absorb Zurax L and translocate it throughout the weed. Treated weeds will show signs of leaf and stem curling or twisting, stunting, change color from green to white (chlorosis), finally to red, and become necrotic before finally dying. Annual plants treated with Zurax L may not show symptoms for up to two weeks after application and up to three weeks for death of the weed. Perennial weeds treated with Zurax L may not show symptoms for several weeks after application and the full effect occurring 3 to 6 months after application.

Thorough coverage of emerged weeds with the Zurax L spray is essential in order for the weed foliage to absorb the Zurax L. Control may be more difficult in fields where larger leaves cover smaller weeds preventing thorough spray coverage of the smaller weeds.

**Restrictions:**

- **DO NOT** apply more than a total of 64 fl oz (0.75 lb ae) of Zurax L per acre per calendar year. The maximum single application rate for quinclorac is 0.75 lbs ae/acre.
- Crop Rotation Restrictions:
  - **Immediate replant allowed after crop failure:** Spring or winter wheat or grain sorghum
  - **Replant allowed 24 months after application:** alfalfa, clover, dry beans, flax, peas, lentils, safflower, solanaceous crops (listed below), and sugar beets. A bioassay must be conducted before planting these crops.
  - **Replant allowed 309 days (10 months) after application:** all other crops
- **DO NOT** use recirculating sprayers, wiper applicators, or shielded applicators.
- Zurax L is rain fast 6 hours after application.
- **DO NOT** apply through any type of irrigation equipment.

- **DO NOT** apply to irrigation ditches or areas that act as a channel for water entering cropland.
- **DO NOT** apply by ground in Arkansas in an area from one mile west of Highway No. 1 to one mile east of Highway No. 163 from the Craighead/Poinsett county line to the Cross/Poinsett county line.
- **State Specific Restrictions:** Because there are additional state restrictions in Arkansas, contact the Arkansas State Plant board or a representative for specific instructions about applying Zurax L in Arkansas.
- **NOT** apply to exposed feeder roots of trees or ornamentals. Be particularly careful within the drip line of trees and other ornamental species.
- **DO NOT** apply into any ornamental bed.
- **DO NOT** use clippings as mulch or compost around flowers, ornamentals, trees, or in vegetable gardens.
- **DO NOT** plant eggplant or tobacco within 12 months on fields treated with Zurax L.
- **DO NOT** plant tomatoes or carrots within 24 months on fields treated with Zurax L.
- **DO NOT** apply when conditions favor drift from target area. Apply when wind speed is less than 10 mph as drift may cause damage or death of nontarget area vegetation.
- **DO NOT** allow spray mist to come into contact with vegetables, flowers, ornamentals, shrubs, trees, and other desirable plants, especially plants belonging to the *Solanaceae* family (tomatoes, eggplant, and bell peppers). **DO NOT** pour spray solutions near these plants.
- **DO NOT** apply to weeds or grasses under stress due to lack of moisture, herbicide injury, mechanical injury or extreme temperatures.
- **DO NOT** use to formulate or reformulate any other pesticide product which is not registered by EPA.

**DRIFT Restrictions**

- **DO NOT** apply by air in states and counties listed in the **AERIAL APPLICATION** section of this label.
- **DO NOT** apply Zurax L by ground when wind is greater than 10 mph by ground or 10 mph by air.
- **DO NOT** t allow Zurax L to drift onto other desirable plants, especially sensitive crops belonging to the following plant families:
  - *Sollanaceae* (tomato, potato, tobacco, eggplant, peppers (*Capsicum*), among others)
  - *Umbelliferae* (celery, parsley, carrots, among others)
  - *Legumenosae* (alfalfa, green bean, among others)
  - *Convolvulaceae* (sweet potato, among others)
  - *Chenopodicaceae* (spinach, sugar beet, among others)
  - *Malvaceae* (okra, among others)
  - *Cucurbitaceae* (watermelon, cucumber, cantaloupe, squash, pumpkin, among others)
  - *Compositae* (lettuce, sunflowers, among others)
  - *Linaceae* (flax)
- **DO NOT** allow spray containing Zurax L to drift onto areas where tomatoes are to be planted, have been planted, or onto emerged tomatoes, as severe injury will occur.
- **DO NOT** use Zurax L in tank mixes not specified on this label or ADAMA technical bulletins.
- **DO NOT** premix Zurax L with fungicides, herbicides, insecticides, additives, or fertilizers as contamination of mixing equipment and movement of Zurax L to off-site mixing areas can occur.

**Precautions:**

- To ensure adequate weed control, **DO NOT** apply to weeds or grasses under stress due to lack of moisture, herbicide injury, mechanical injury or extreme temperatures.
- To prevent crop injury, **DO NOT** apply to crops under stress due to hail damage, flooding, drought, injury from other herbicides, or widely fluctuating temperatures.
- Use a lawn-type sprayer with coarse spray to reduce drift from wind.

**Mode of Action**

Zurax L is an auxin agonist classified as a quinoline carboxylic acid, is a systemic herbicide with plant uptake through both foliage and roots. Herbicide symptoms on susceptible plants include twisting, stunting, reddening and chlorosis.

**On Annual Weeds:** Symptoms may take up to two weeks after application to develop with death occurring in about three weeks.

**On Perennial Weeds:** Symptoms may not be evident for several weeks after application; full effect may not be evident for 3 to 6 months.

**Resistance Management**

Zurax L is a Group 4 herbicide which contains the active ingredient quinclorac. Some biotypes of barnyardgrass are known to be resistant to Zurax L. Where naturally resistant biotypes occur, control can be achieved by sequentially applying or tank mixing this product with a registered product with a different mode of action. Fields should be scouted prior to application to identify the weed species present and their growth state to determine if the intended application will be effective. Fields should be scouted 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. Plant into weed-free fields and keep fields as weed-free as possible.

To the extent possible, use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.

Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative modes of action or different management practices.

To the extent possible **DO NOT** allow weed escapes to produce seeds, root or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed bank.

Prevent field-to-field and within-field movement of weed seed or vegetative propagules. Thoroughly clean plant residues from equipment before leaving fields.

Prevent an influx of weed into the field by managing field borders.

Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.

Difficult to control weeds may require sequential application of herbicides with differing mechanisms of action.

Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.

Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. **DO NOT** use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.

Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of actions for reach target weed.

If resistance in suspected, treat weed escapes with a herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production. If resistance appears likely contact your retailer representative or call ADAMA at 866-406-6262.

**WEEDS CONTROLLED OR SUPPRESSED**

When used as directed, Zurax L will provide suppression or control of weed species listed in **Table 1**.

**Table 1: Target Weeds**

| Weeds Controlled | Weeds Suppressed* |
|---|---|
| **Annual Grasses** | **Perennial Broadleaves** |
| Barnyardgrass | Bindweed[1], field, hedge |
| Crabgrass, large | **Annual Broadleaves** |
| Foxtail, giant, green, yellow | Alligatorweed |
| Junglerice | Kochia |
| Signalgrass, broadleaf | Lambsquarters, common |
| **Annual Broadleaves** | Ragweed, common, giant |
| Bedstraw, catchweed (cleavers) | Sunflower, wild |
| Clovers | Thistle[3], Russian |
| Eclipta | Velvetleaf |
| Jointvetch, Indian | **Perennial Broadleaves** |
| Jointvetch, Northern | Dandelion |
| Lettuce, prickly | Sowthistle[3], perennial |
| Morningglory spp. | Spurge[2], leafy |
| Flax, volunteer | Thistle[3], Canada |
| Sesbania, hemp. | |

*__DO NOT__ apply more than a total of 64 fl oz of Zurax L per acre (0.75 lbs ae/acre) per calendar year. Make applications at yellow bract (pre-bloom) or in the fall before first severe frost. For best performance to control these species, apply 32 oz per acre of Zurax L as a tank mix with a dicamba-based herbicide.

Improved control is achieved by tank mixing Zurax L with another herbicide that controls these listed species.

[1] See additional use directions under **FIELD AND HEDGE BINDWEED CONTROL DIRECTIONS** section of this label.

[2] **DO NOT** apply more than a total of 64 fl oz of Zurax L per acre per calendar year Apply 32 to 64 fl oz of Zurax L per acre in non-crop areas for suppression and annual growth control. Make applications at yellow bract (pre-bloom) or in the fall before first severe frost. For best performance to control this species, apply 16 fl oz per acre of Zurax L as a tank mix with a dicamba-based herbicide.

[3] **DO NOT** apply more than a total of 32 oz of Zurax L per acre per calendar year. Apply 32 fl oz of Zurax L per acre for suppression and annual growth control. Make applications at rosette stage or bud stage and **DO NOT** make application when seed stalk is bolting. For best performance on this species, tank mix 32 fl oz per acre of Zurax L with a dicamba-based herbicide.

**FIELD AND HEDGE BINDWEED CONTROL DIRECTIONS**

Application of Zurax L herbicide in the fall just prior to the first severe frost provides the most effective bindweed control. Make applications to bindweed plants that are actively growing and at least 4 inches long. Wait a minimum of 30 days for bindweed plants to regrow after tillage (if tillage is a part of the local postharvest practice) before making the Zurax L application. If applied yearly at 21 to 32 fl oz per acre in the fall, Zurax L will provide long-term bindweed control. The higher rate within the rate range is used when plants are large or densely populated. Refer to **Table 3** in the **SPRAY ADDITIVES** section of this label for additional requirements.

**CANADA THISTLE, PERENNIAL SOWTHISTLE AND RUSSIAN THISTLE**

Use 32 fl oz/A of Zurax L for suppression and annual growth control of Canada thistle, perennial sowthistle and Russian thistle. Apply Zurax L at rosette stage or bud state. **DO NOT** make application when seed stalk is bolting. For best performance in pasture (including pasture grown for hay), rangeland, and Conservation Reserve Program Land (CRP) on Canada thistle, perennial sowthistle and Russian thistle, tank mix 32 fl oz/A of Zurax L with a dicamba-based herbicide

**LEAFY SPURGE**

Use 32 to 64 fl oz/A of Zurax L in noncrop areas for suppression and annual growth control of leafy spurge. Apply Zurax L at yellow bract (prebloom) or in the fall before the first killing frost. For best performance in pasture (including pasture grown for hay), rangeland and Conservation Reserve Program Land (CRP) on leafy spurge, tank mix 32 fl oz/A of Zurax L with a dicamba-based herbicide.

**Zurax L HERBICIDE APPLICATION AREA**

Zurax L may be applied in the following states: Alabama, Arkansas, Colorado, Delaware, Idaho, Illinois, Kansas, Kentucky, Louisiana, Maryland, Minnesota, Mississippi, Missouri, Montana, North Dakota, Nebraska, New Mexico, Nevada, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Utah, Virginia, Washington, Wyoming, and the following counties in Texas: Archer, Armstrong, Bailey, Baylor, Borden, Briscoe, Brown, Callahan, Carson, Castro, Childress, Clay, Cochran, Coke, Coleman, Collin, Collingsworth, Concho, Cooke, Cottle, Crosby, Dallam, Dawson, Deaf Smith, Denton, Dickens, Donley, Fisher, Floyd, Foard, Garza, Glasscock, Gray, Grayson, Hale, Hall, Hansford, Hardeman, Hartley, Haskell, Hemphill, Hockley, Hutchinson, Jack, Jones, Kent, King, Know, Lamb, Lipscomb, Lubbock, Lynn, McCulloch, Montague, Moore, Motley, Nolan, Chiltree, Oldham, Parmer, Potter, Randall, Roberts, Runnels, Schackleford, Scurry, Sherman, Sterling, Stonewall, Swisher, Taylor, Terry, Throckmorton, Wheeler, Wichita, Wilbarger, Wise, Yoakum, and Young. **Prior to application of Zurax L, obtain and follow all Texas state requirements for such uses.**

**APPLICATION INFORMATION**

Zurax L may be applied to the sites indicated in this section of the label by ground or aerial application equipment.

Make Zurax L applications by broadcast or spot sprays when weeds are actively growing. Optimum results are achieved for most broadleaf weeds from application of Zurax L when weeds are small. If the weeds become too large, adequate control may not be obtained. If weeds are not actively growing, irrigation prior to application may be required to ensure effective control.

Refer to the **RESTRICTIONS** section and the **AERIAL APPLICATION** section for specific state and county restrictions.

**GROUND APPLICATION (Broadcast)**

**DO NOT** apply when wind speeds are more than 10 mph at the application site.

**DO NOT** release spray at a height greater than 30 inches above the ground

Make applications of Zurax L in properly calibrated ground equipment. Apply in 5-40 gallons of water per broadcast acre. Consult spray tip performance and **DO NOT** exceed manufacturer-recommended spray pressures. For many nozzle types, lower pressure produces larger droplet sizes. When higher flow rates are needed use higher flow rate nozzles instead of increasing pressure. Ensure that sprayer rate controller systems (if so equipped) does not allow pressure to increase above the desired range. For dense weed foliage, use the higher spray volumes.

Use only nozzles that will produce uniform spray patterns and thorough coverage and medium or coarser droplets (ASABE standard 572). Place nozzles up to 20 inches apart. Select nozzles which are designed to produce minimal amounts of fine spray particles. **DO NOT** use controlled droplet applicator (CDA) nozzles which can cause erratic weed coverage and lead to inconsistent weed control. **DO NOT** use selective application equipment such as recirculating sprayers or wiper applicators. Recommended nozzles for drift reduction include Delavan® Raindrop Drift Reduction Flat Spray Tip, RF Tips, XR Tee Jet™ Extended range Flat Spray Tips, or other brands with similar capabilities.

Refer to Table 3 in the **SPRAY ADDITIVES** section of this label for additional requirements.

**AERIAL APPLICATION**

Make applications of Zurax L in properly calibrated aerial application equipment.

Apply 5 or more gallons of water per acre.

Medium or coarser spray droplets (ASABE standard 572).

The maximum release height must be 10 feet from the top of the canopy, unless a greater application height is required for pilot safety.

**DO NOT** make aerial application when:

- Prohibited by state regulations
- Wind speeds are more than 8 mph at the application site
- Air temperature is more than $90^0$ F or when environmental conditions exist for temperature inversions

**DO NOT** apply aerial application on Turfgrass.

**Flaggers and other personnel working on the ground to help guide aerial applications must not make contact with spray mist and must wear personal protective equipment (PPE) and protective eyewear.**

Refer to **Table 2A** in the section **SPRAY ADDITIVES** section of this label for additional requirements. Zurax L may be applied by air in states listed in **Table 2A**

**Table 2A. Zurax L Aerial Application Permitted**

| | |
|---|---|
| Arkansas[1] | Nebraska[1] |
| Colorado[1] | Nevada |
| Idaho[1] | New Mexico[1] |
| Illinois | North Dakota[1] |
| Iowa | Oklahoma[1] |
| Kansas[1] | Oregon[1] |
| Louisiana | South Dakota[1] |
| Minnesota | Texas[1] |
| Mississippi | Utah[1] |
| Missouri | Washington[1] |
| Montana[1] | Wyoming |
| [1] See **Table 2B** for specific geographic restrictions where aerial application is not permitted. | |

Because of the possible presence of endangered plant species as well as additional state restrictions, aerial application is **NOT** permitted in the geographic areas listed in **Table 2B**.

**Table 2B. Zuraz L Aerial Application NOT Permitted**

| State | County/Geographic Area |
|---|---|
| Arkansas[1] | The area of Poinsett County one-mile west of Highway No. 1 to two-miles west of Highway No. 1 and one-mile east of Highway No. 163 to Ditch No. 10 from the Craighead/Poinsett county line to the Cross/Poinsett county line<br>See also, **State Specific Restrictions** section for areas where Zurax L use is prohibited by **ANY** method of application. |
| Colorado | Boulder, Delta, Garfield, Jefferson, La Plata, Mesa, Montezuma, Montrose, Morgan, Rio Blanco, San Miguel, Weld |
| Idaho | Idaho, Kootenai, Latah |
| Kansas | Allen, Anderson, Atchison, Bourbon, Coffey, Crawford, Douglas, Franklin, Jackson, Jefferson, Johnson, Leavenworth, Linn, Lyon, Miami, Neosho, Osage, Pottawatomie, Riley, Shawnee |
| Montana | Lake, Missoula |
| Nebraska | Box Butte, Cherry, Garden, Hall, Lancaster, Morrill, Seward, Sheridan |
| New Mexico | Chaves, Dona Ana, Eddy, San Miguel |

| State | County/Geographic Area |
|---|---|
| North Dakota | Ransom, Richland |
| Oklahoma | Choctaw, Craig, Rogers |
| Oregon | Benton, Clackamas, Coos, Douglas, Harney, Klamath, Lane, Linn, Marion, Polk, Wallowa, Washington, Yamhill |
| South Dakota | Bennett, Brookings, Brown, Clay, Coddington, Day, Deuel, Grant, Lincoln, Minnehaha, Moody, Roberts, Todd, Turner, Union, Yankton |
| Texas | Bandera, Coke, El Paso, Freestone, Hays, Hudspeth, Jim Wells, Kerr, Kimble, Kleberg, Leon, Live Oak, Madison, Mitchell, Nueces, Pecos, Robertson, Runnels, San Patricio, Starr, Uvalde, Washington |
| Utah | Cache, Carbon, Duchesne, Emery, Garfield, Kane, Salt Lake, San Juan, Sanpete, Sevier, Tooele, Uintah, Utah, Washington, Wayne, Weber |
| Washington | Chelan, Clark, Cowlitz, Island, Spokane |
| [1] Because there are additional state restrictions in Arkansas, contact the Arkansas Plant Board or a representative for specific instructions about applying Zurax L in Arkansas. | |

**SPRAY ADDITIVES**

The use of spray additive(s) with Zurax L is required in order to achieve consistent weed control. Methylated seed oil (MSO) is the recommended spray additive with Zurax L. Crop oil concentrates may also be used with Zurax L. Enhanced efficacy can be achieved by addition of a nitrogen fertilizer source (AMS or UAN) but cannot be used in place of methylated seed oil or crop oil concentrate. Refer to **Table 3. Spray Additive Rate Per Acre** section below for spray additive rates. Consult your local ADAMA representative for recommendations for your area.

**Table 3. Spray Additive Rate per Acre**

| Spray Additive | Amounts to use for Aerial Applications | Amounts to use for Ground Applications |
|---|---|---|
| Methylated Seed Oil | 1.0 – 2.0 pints[2] | 1.0 – 2.0 pints[2] |
| Crop Oil Concentrate | 2.0 pints | 2.0 pints |
| AMS, Liquid[1] | 1.5 quarts | -- |
| AMS, Solid[1] | -- | 2.5 pounds |
| UAN Solution[1] | 0.5 gallons | 0.5 – 1 gallons |

[1] Optional

[2] For best grass control, use at least 1.5 pints/acre of methylated seed oil.

**Methylated Seed Oil or Crop Oil Concentrate:**

A methylated seed oil or crop oil concentrate must meet all of the following criteria:

- Contain either a petroleum or vegetable oil base, and
- be nonphytotoxic, and
- contain only EPA-exempt ingredients, and
- provide good mixing results from the **Compatibility Test for Tank Mixtures** section of this label, and
- be successful in local experience.

Suitable products will vary in their exact composition, but vegetable and petroleum oil concentrates should contain emulsifiers that provide good mixing quality. Better results have been proved with highly refined vegetable oils than with unrefined vegetable oils.

For additional information, see **Compatibility Test for Tank Mixtures** section of this label.

**For bindweed control in Oklahoma, New Mexico and the designated counties of Texas, addition of methylated seed oil plus AMS is mandatory when Zurax L is applied alone.**

**Nitrogen Fertilizer Sources:**

1. **Urea ammonium nitrate (UAN):** These products are 28%, 30% or 32% nitrogen solutions. If including UANs in spray tanks, **DO NOT** use brass or aluminum spray nozzles.
2. **Ammonium sulfate (AMS):** AMS may be substituted for UAN. Use high-quality AMS (spray grade) to avoid plugging of nozzles. Other sources of nitrogen are not as effective as the ones mentioned above. AMS has the potential to cause precipitation in reduced carrier volumes. Use AMS only if tested in a jar test

or it has been demonstrated to be successful in local experience. Because most nitrogen solutions are mildly corrosive to galvanized, mild steel, and brass spray equipment, rinse the entire spray system with water soon after use. To avoid plugging of spray nozzles: 1) Use high-quality AMS; 2) Use an AMS which is readily soluble in water and contains no insoluble materials. Local sources of high-quality, fine, feed-grade AMS may be better than fertilizer grade. Low-quality AMS may contain material that will not readily dissolve, which could result in nozzle tip plugging; 3) To determine AMS quality, perform a jar test adding 1/3 cup of ammonium sulfate to 1 gallon of water and agitate for 1 minute. If any undissolved sediment is observed, pre-dissolve the AMS in water and filter before adding it to the spray tank. If the AMS is added directly to the spray tank, add slowly while agitating. Adding the mix too quickly may clog outlet lines.

**Nonionic Surfactant:**

A nonionic spray surfactant (80%) may only be used when Zurax L is tank mixed with other products that prohibit the use of oil additives. Reduced weed control from Zurax L plus the nonionic surfactant may result. Use at the nonionic surfactant rate of 1 quart per 100 gallons of water (0.25% vol./vol.). If a nonionic surfactant is used with Zurax L, a nitrogen fertilizer source must be used as well.

**TANK MIXTURES WTH Zurax L**

Other registered products may be tank mixed with Zurax L. 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.

ADAMA does not recommend using tank mixes other than those listed on ADAMA labeling. Physical incompatibility, reduced weed control, or crop injury may result from mixing Zurax L with other pesticides, additives, or fertilizers. Local agricultural authorities may be a source of information when using other than ADAMA recommended tank mixes.

For suppression of weeds listed in **Table 1**, use the following herbicides as tank mixes with Zurax L. When mixing Zurax L as a tank mix, use a rate of 21 to 32 fl oz per acre of Zurax L.

2,4-D
ATRAZINE
BROMOXYNIL
BROMOXYNIL + ATRAZINE
DICAMBA
PARAQUAT
DIFLUFENZOPYR + DICAMBA
GLYPHOSATE + DICAMBA
DIMETHENAMID
DIMETHENAMID-P + ATRAZINE
GLYPHOSATE + 2,4-D
DICAMBA + ATRAZINE
DIMETHENAMID-PROSULFURON
GLYPHOSATE
DICAMBA + 2,4-D

**Compatibility Test for Tank Mixtures**

Carry out this test using a one-quart jar. Add the ingredients in the order listed below. To calculate the amount to add to a one quart jar, use the following guidelines:

- For dry products applied at 64 fl oz per acre, add 5 teaspoons to a one-quart jar. For Zurax L at the 21 fl oz rate, use 2 teaspoons. For Zurax L at the 32 fl oz rate, use 2.5 teaspoons.
- For liquid products applied at 1 pint per acre, add 1 teaspoon to a one-quart jar.

1. **Water:** For a spray volume of 20 gallons per acre, add 3.3 cups (800 ml) of water. Adjust the rates if other spray volumes are planned. Use water from the intended source.
2. Cap the jar and invert 10 times.
3. **Water-Dispersible (WG) Products (such as dry flowables (DF) including wettable powders (WP), suspension concentrates (SC), or suspoemulsions :** Cap the jar and invert 10 times.
4. **Water-soluble products (Including Zurax L):** Cap the jar and invert 10 times.
5. **Emulsifiable concentrates, methylated seed oil, or crop oil concentrate**: Cap the jar and invert 10 times.
6. **Water-soluble additives, including AMS or UAN:** Cap the jar and invert 10 times.

Let the test mixture stand for 15 minutes and then evaluate for uniformity and stability. The spray solution should not have free oil on the surface or fine particles that precipitate to the bottom or thick (clabbered) texture. **DO NOT** use any spray solution that could clog spray nozzles.

**DIRECTIONS FOR MIXING Zurax L**

Before mixing Zurax L with other products, conduct a compatibility test to determine if the spray solution is stable. Follow the directions in the section **Compatibility Test for Tank Mixtures** section of this label.

1. Use only spray tanks that have been cleaned prior to use.
2. Add ¾ the amount of required water to the spray tank while agitating.
3. If an inductor system is used, rinse thoroughly after addition of each component.

Add products to the spray tank in the following order

- water-soluble pouches; allow the pouches to dissolve before agitation or adding the next component.
- water dispersible products including (dry flowables, wettable powders, suspension concentrates or suspoemulsions).
- water-soluble products (Including Zurax L)
- Emulsifiable concentrates (including oil concentrates)
- Water-soluble additives (AMS or UAN)

Add the remaining amount of water to the tank and agitate to ensure a uniform distribution.

Continue agitation until spraying is completed. If the spray solution is allowed to settle, reagitate thoroughly to resuspend the mixture and then continue spray operations.

**Cleaning of Spray Equipment**

Ensure that spray equipment is properly and thoroughly cleaned before and after applying Zurax L. Use a strong detergent or commercial sprayer cleaner and follow the manufacturer's directions for use.

## CROP SPECIFIC INFORMATION

**Crop-Specific Restrictions**

- **DO NOT** allow livestock to graze in treated areas.
- Pre-Harvest Interval (PHI): **DO NOT** harvest hay from treated areas within 309 days after application.
- **DO NOT** feed treated grasses, forage hay, silage, straw, seed or seed screenings to livestock.
- **DO NOT** apply to water or to areas where surface water is present.
- **DO NOT** apply to irrigated ditches or areas that act as a channel for water entering cropland.

### PRE-PLANT WHEAT OR PRE-PLANT SORGHUM

**DO NOT use on preplant wheat in the following states: ID, MT, NV, OR, UT, WA or WY**

Apply Zurax L at 21 fl oz per acre in preplant wheat (see state restrictions above) or preplant grain sorghum to control annual grasses and broadleaf weeds (see **Table 1**). For bindweed control with Zurax L, refer to the section of this label entitled **FIELD AND HEDGE BINDWEED CONTROL DIRECTIONS** for additional use directions.

If Zurax L is applied as a preplant treatment in wheat, be sure that the wheat is planted at least 1" deep. Crop injury could occur if the wheat is planted in shallow (<1" deep) soil especially if the wheat is subject to drought or other conditions that lead to plant stress.

Zurax L may be tank mixed with 2,4-D, dicamba and glyphosate. See label of tank mixture herbicides for rate and follow the most restrictive label.

**In-Crop Sorghum**

Apply Zurax L to grain sorghum at 21 to 32 fl oz per acre for control of annual grasses and broadleaf weeds. Time applications to occur preemergence to postemergence (to 12" inch tall sorghum). For optimum annual grass control, apply Zurax L (21 to 32 fl oz per acre) in a tank mix with atrazine (see atrazine label for rate) when weeds are less than 2" tall.

**DO NOT** use liquid fertilizer as a carrier for postemergence applications of Zurax L to grain sorghum.

In Oklahoma, New Mexico, and in the designated counties in Texas, **DO NOT** apply more than 32 oz of Zurax L per acre to in-crop sorghum.

**Tank Mixes:** Other registered products may be tank mixed with Zurax L. Before using other products in combination with Zurax L, read and follow the restrictions and limitations and directions for use on all products' labels. The most restrictive labeling applies to tank mixes. Zurax L may be tank mixed with 2,4-D, atrazine, dicamba, and glyphosate at preplant timings, and 2,4-D, atrazine, dicamba , prosulfuron, bromoxynil and bromoxynil + atrazine at postemergence timings.

## RICE

Zurax L may be used in dry-seeded, water-seeded, and all types of rice plantings and production cultures to control weeds. Zurax L is a liquid formulation to be diluted with water prior to application using common agricultural spray equipment.

Rice is tolerant to Zurax L when used according to the use directions on this label and when typical growing conditions exist. If spray overlap is restricted, as mentioned below, then higher rates from spray overlap should not occur. Note that broadcast or water-seeded rice seeds sitting on the soil surface that come in direct contact with Zurax L will be most sensitive and exhibit these abnormal growth characteristics. These symptoms are typically short lived and rice usually recovers without a significant stand loss or other injury.

**Restrictions**

- **DO NOT** apply more than 43 fl oz/A of Zurax L per application.
- **DO NOT** apply more than 43 fl oz/A of Zurax L per season.
- **DO NOT** apply Zurax L to rice that is heading.

**Preharvest Interval (PHI): DO NOT** apply Zurax L within 40 days of harvest.

**Crop Rotation Restrictions:**

- Rice: In case of crop failure, only rice may be immediately replanted to fields treated with Zurax L.
- In case of crop failure, only rice, spring or winter wheat, or grain sorghum may be immediately replanted.
- **DO NOT** plant any crop other than rice, spring or winter wheat, or grain sorghum for 10 months following application.
- Wheat: Wheat may be planted 6 months after a Zurax L application in the following states: Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming
- Eggplants and tobacco: **DO NOT** plant for 12 months after application to treated fields.
- Tomatoes and carrots: **DO NOT** plant for 24 months after application to treated fields.
- Alfalfa, carrots, clover, dry beans, flax, lentils, peas, safflower, Solanaceous crops listed in Spray Drift to Sensitive Crops section, and sugar beets: **DO NOT** replant for 24 months. Conduct a bioassay before planting any of these crops
- Other Crops: **DO NOT** plant any other crop (other than rice) for 309 days (10 months) after application to treated fields.

**Soil Restrictions:**

- **DO NOT** use Zurax L on precision-cut fields until the second rice crop as injury can occur.
- **DO NOT** use Zurax L on sand and loamy sand soils.
- **DO NOT** apply to rice fields with a history of poor water-holding capacity (porous subsoil), as erratic weed control may result.
- **DO NOT** apply Zurax L on rice-growing soil that does not have an impermeable hard pan to provide good water holding capacity.

**Drift Concerns:**

- **DO NOT** allow Zurax L to drift outside the intended target areas.
- Ground application: **DO NOT** apply when wind speed is greater than 10 mph.
  - **DO NOT** release spray at a height greater than 30 inches above the ground
- Aerial application: **DO NOT** apply when wind speed is greater than 10 mph.
  - **DO NOT** release spray at a height greater than 10 feet above the crop canopy, unless a higher application height is required for reasons of pilot safety

**Temperature Inversions: DO NOT** apply Zurax L when air temperatures exceed 90°F.

- **DO NOT** use rice straw or processing byproducts (such as chaff, hulls, etc.) as soil amendments or mulch for high-value crops such as bedding stock, vegetable transplants, or ornamental and fruit trees.
- **DO NOT** use treated rice fields for the aquaculture of edible fish and *Crustacea* (crayfish).
- **DO NOT** use water from rice cultivation after a Zurax L application to irrigate any crop other than rice.
- **DO NOT** apply this product through any type of irrigation system.

**State Specific Restrictions:** Because there are additional state restrictions in Arkansas, contact the Arkansas Plant board or a representative for specific instructions about applying Zurax L in Arkansas.

In Arkansas, Zurax L must not be applied in an area from one mile west of Highway #1 to one mile east of Highway #163 from the Craighead – Poinsett County line to the Cross – Poinsett County line. No aerial application is allowed in the area of Poinsett County one mile west of Highway #1 to two miles west of Highway #1 and one mile east of Highway #163 to Ditch #10, from the Craighead – Poinsett County line to the Cross-Poinsett county line. For use in New York State by spot treatment only.

**Water Management (Irrigation and Flood Water)**

To ensure optimum weed control with Zurax L, use proper irrigation practices including effective flush irrigation to maintain moist soil conditions and timely establishment of permanent floodwater.

Zurax L is a systemic herbicide. The weed foliage and roots absorb Zurax L and translocates it throughout the weed. Treated weeds will show signs of leaf and stem curling or twisting, stunting, change color from green to white (chlorosis), finally to red, and become necrotic before finally dying. Weeds are controlled only when moist soil conditions exist which help the weeds absorb Zurax L. Therefore, the soil must be kept moist to maintain weed control. If the soil becomes dry and weeds emerge after a Zurax L application, flush-irrigate the treated field to reactivate the residual activity of the Zurax L while weeds are small (1" or less).

An application of Zurax L may be made if needed, but **DO NOT** exceed more than 57 fl oz/A per season (see **Restrictions** section of this label for further limitations). In water-seeded rice plantings and in pinpoint flood culture, drain all water from the rice field and ensure seedling rice has at least two leaves before applying Zurax L. Injury may occur in rice seedlings without 2 leaves. For more consistent weed control, form floodwater levees before making a Zurax L application. Although Zurax L provides residual weed control, if the levee soil becomes dry, erratic weed control may result.

**DO NOT** apply Zurax L if heavy rain is expected. If heavy rain does occur after the application, drain any excess water from the rice field to avoid possible rice injury.

**APPLICATION INFORMATION**

Zurax L may be applied to rice fields to control barnyardgrass, propanil-resistant barnyardgrass, other annual grasses, and certain broadleaf weeds.

**Application Equipment:** Both ground and air applications are permitted; however, whenever possible make applications by ground application.

**DO NOT make spray applications when wind speed is greater than 10 mph (ground) or 8 mph (air), when air temperatures exceed 90°F, or when environmental conditions exist for temperature inversions.**

Use only nozzles that will produce uniform spray patterns and thorough coverage. Select nozzles designed to produce minimal amounts of fine spray particles. Always use drift control agents and apply only when wind and other weather conditions **DO NOT** favor spray drift beyond the rice field borders.

**Ground Application**

Whenever possible, make applications of Zurax L using ground spray equipment.

**DO NOT** apply when wind speed is greater than 10 mph.

**DO NOT** release spray at a height greater than 30 inches above the ground

For preplant/preemergence or delayed preemergence, apply Zurax L in 10-40 gallons of water per broadcast acre at pressures between 25-40 psi.

For postemergence applications, apply Zurax L in 10-20 gallons of water per broadcast acre at pressures between 25-40 psi.

**Air Application**

If application with ground spray equipment is not possible, application by aircraft is allowed as long as the aerial applicator understands the risks and assumes the liability associated with accidental spray drift from aerial application. **DO NOT** make spray applications when wind speed is greater than 10 mph, when air temperatures exceed 90°F, or when environmental conditions exist for temperature inversions. **DO NOT** release spray at a height greater than 10 feet above the crop canopy, unless a higher application height is required for reasons of pilot safety

Apply Zurax L in a minimum of 5 gallons of water per acre at a minimum pressure of 40 psi.

**DO NOT allow Zurax L to drift outside of the intended target areas.**

**No aerial application** is allowed in Arkansas in the area of Poinsett County one mile west of Highway #1 to two miles west of Highway #1 and one mile east of Highway #163 to Ditch #10, from the Craighead-Poinsett county line to the Cross-Poinsett county line.

**Soil Applications:** Apply Zurax L to the soil surface before, during, or after planting of dry-seeded rice. Once activated by rainfall or irrigation, the roots of susceptible grasses and broadleaf weeds uptake the herbicide and results in commercially acceptable weed control before weed competition reduces rice productivity. Use rates for Zurax L will depend on soil texture and clay content for optimum weed control. Refer to **Table 4** for application rates for heavier soil textures and higher clay content soil types.

**Foliar Applications:**

When Zurax L is applied to target grass and broadleaf weed foliage in dry-seeded and water-seeded rice, the leaves and stems partially uptake the herbicide. After this foliar application, the rice must be flushed to ensure root absorption of Zurax L. The combination of leaf, stem and root absorption of Zurax L results in commercially acceptable weed control.

Some residual weed control activity occurs from the herbicide reaching the soil surface and moving into the soil from rainfall or irrigation. The lower use rates most often control smaller weeds while the higher use rates are needed for larger weeds. Refer to **Table 4** for foliar application use rates which will provide commercially acceptable control of susceptible weeds based on weed size or growth stage.

**Table 4. Timing and Application Rate Table** (see **Restrictions** section of this label for further limitations):

| | Soil application fl oz/A | | | Foliar application fl oz/A | |
|---|---|---|---|---|---|
| Weeds Controlled | Coarse Soil[1] | Medium Soil[2] | Fine Soil[3] | Small Weeds and short-term residual | Large Weeds and Long-term residual |
| Grasses | | | | | |
| Barnyardgrass | 22 to 28 | 32 | 43 | 26 to 32 Up to 2 inches | 26 to 43 2 to 3 Inches |
| Crabgrass, Large | | | | | |
| Jungle rice | | | | | |
| Signalgrass, Broadleaf | | | | | |
| Broadleaf Weeds | | | | | |
| Eclipta | 22 to 28 | 32 | 43 | 26 to 32 Up to 2 leaves | 32 to 43 Up to 3 leaves |
| Jointvetch, Indian | | | | | |
| Jointvetch, Northern | | | | | |
| Morningglory, Cypressvine | | | | | |
| Morningglory, entireleaf | | | | | |
| Morningglory, ivyleaf | | | | | |
| Morningglory, pitted | | | | | |
| Morninggllory, purple moonflower | | | | | |
| Morningglory tall (common) | | | | | |
| Sesbania, hemp | | | | | |
| Alligatorweed[4] | n/a | n/a | n/a | 43 | n/a |

[1] Sandy Loam
[2] Silt, loam, silty loam, sandy clay loam
[3] Silty clay, silty clay loam, clay loam, clay, gumbo, and buckshot
[4] Partial control only. Rice must be in at least the 2-leaf stage. For best control, establish permanent flood within 2 days after Zurax L herbicide application

**ADDITIVES**

For postemergence applications only, add 2 pints of crop oil concentrate per acre to spray tank solutions of Zurax L for improved leaf and stem uptake and enhanced weed control.

**Drift Control Products.** Always add a drift control agent to the spray solution to affect spray droplet size and other characteristics and to reduce the potential of off-target accidental spray drift.

**DIRECTIONS FOR MIXING Zurax L**

1. Use only spray tanks that have been cleaned prior to use.
2. Add ¾ the amount of required water to the spray tank while agitating. Maintain constant agitation throughout mixing and application.
3. If an inductor is used, rinse it thoroughly after the component has been added.

Add products to the spray tank in the following order:

- water-soluble pouches - allow the pouches to dissolve before agitation or adding the next component.
- water dispersible products (such as wettable powders, suspension concentrates or suspo-emulsions).
- water-soluble products
- emulsifiable concentrates
- water-soluble additives

Add the remaining amount of water to the tank and agitate to ensure a uniform distribution.

Continue agitation until spraying is completed. If the spray solution is allowed to settle, re-agitate thoroughly to resuspend the mixture and then continue spray operations.

**Cleaning of Spray Equipment**

Ensure that spray equipment is properly and thoroughly cleaned before and after applying Zurax L. Use a strong detergent or commercial sprayer cleaner and follow the manufacturer's directions for use.

**Cleaning Spray Equipment**

Thoroughly clean all mixing equipment and all spray equipment before and after mixing and applying Zurax L.

**TANK MIXING INFORMATION**

Other registered products such as those listed below may be tank mixed with Zurax L to provide control of a broader spectrum of annual grasses and broadleaf weeds in rice. Before using other products in combination with Zurax L, read and follow the restrictions and limitations and directions for use on all products' labels. The most restrictive labeling applies to tank mixes. **Table 5** below describes some weed situations where tank mixing is appropriate.

**Table 5. Tank Mixes**

| **Weed** | **Tank Mix Information** |
|---|---|
| Cocklebur | Zurax L: 28-57 fl oz/A & bentazon |
| Dayflower | Zurax L: 28-57 fl oz/A & bentazon |
| Hemp Sesbania | Zurax L: 28-57 fl oz/A & acifluorfen & bentazon<br>OR<br>Zurax L: 28-57 fl oz/A clomazone |
| Red, Weedy and Feral Rice | Imazethapyr or imazamox on appropriate herbicide tolerant rice systems. |
| Sprangletop | Zurax L: 028-57 fl oz/A.& thiobencarb<br>OR<br>Zurax L: 28-57 fl oz/A & pendimethalin<br>OR<br>Zurax L: 28-57 fl oz/A clomazone |
| Yellow Nutsedge | Zurax L: 28-57 fl oz/A & bentazon |
| Morningglory | Zurax L: 28-57 fl oz/A & clomazone |
| Heavy infestations of broadleaf weeds | Zurax L: 28-57 fl oz/A & acifluorfen & bentazon |
| For weeds and grasses not controlled by Zurax L | Zurax L: 28-57 fl oz/A & propanil |

[1]Apply tank mix after rice has reached the 3-leaf stage.
[2]Apply tank mix to the soil surface 1-5 days before rice emergence.
[3]Apply this tank mix to the soil surface after planting, before rice emerges, and before sprangletop emerges.

**Additional tank mix partners include:**
**Carfentrazone, penoxsualm, halosulfuron, bispyribac, fenoxaprop, saflufenacil.**

# STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage and disposal.

**PESTICIDE STORAGE:** Store in a cool, dry and well ventilated area. **DO NOT** store under wet conditions.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**CONTAINER HANDLING:**

**Nonrefillable Container (flexible-bag-all weights): DO NOT** reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling, if available, or dispose of empty bag in a sanitary landfill or by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Nonrefillable Container (5 gal or less): DO NOT** reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. 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 or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Nonrefillable Container (greater than 5 gal): DO NOT** reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ 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 or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

## LIMITATION OF WARRANTY AND LIABILITY

Read the entire directions for use, conditions of warranties and limitations of liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following **CONDITIONS**, **DISCLAIMER OF WARRANTIES** and **LIMITATIONS OF LIABILITY**.

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of ADAMA. All such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** To the extent consistent with applicable law, ADAMA makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. No agent of ADAMA is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, ADAMA disclaims any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

**LIMITATIONS OF LIABILITY:** To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid or at ADAMA's election, the replacement of product.



**Manufactured for:**
Makhteshim Agan of North America, Inc. (d/b/a ADAMA)
8601 Six Forks Road, Suite 300
Raleigh, NC 27615

101524.v1

# Zurax L

GROUP 4 HERBICIDE

PEEL BACK BOOK HERE

**Herbicide For Use on Wheat, Sorghum, and Rice**

| **ACTIVE INGREDIENT:** | **% BY WT.** |
|---|---|
| Dimethylamine salt of quinclorac: | |
| 3,7-dichloro-8-quinolinecarboxylic acid | 17.79% |
| **OTHER INGREDIENTS:** | 82.21% |
| **TOTAL:** | 100.00% |

**Equivalent to:**
1.50 lbs quinclorac: 3,7-dichloro-8-quinolinecarboxylic acid equivalent per gallon

**EPA Reg. No. 66222-283**

**EPA Est. No. 37429-GA-001[BT]; 37429-GA-002[BO]; 37429-GA-003[BV]**

Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

## KEEP OUT OF REACH OF CHILDREN

## CAUTION/PRECAUCIÓN

Si usted no entiende la estiqueta, busque a alguien para que se la explique a usted en detalle. (If you **DO NOT** understand the label, find someone to explain it to you in detail.)

**PRECAUTIONARY STATEMENTS**
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**
**CAUTION**
Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Avoid contact with eyes or clothing.

## How can we help?
## 1-866-406-6262

**Manufactured for:**
Makhteshim Agan of North America, Inc.
(d/b/a ADAMA)
8601 Six Forks Road, Suite 300
Raleigh, NC 27615

HERBICIDE

ADAMA
ESSENTIALS

| FIRST AID |
|---|
| **IF SWALLOWED:** • Call 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. |
| **IF IN SKIN OR CLOTHING:** • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice. |
| **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 INHALED:** • Move person to fresh air. • If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth to mouth, if possible. • Call a poison control center or doctor for further treatment advice. |
| **HOT LINE NUMBER** |
| Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-877-250-9291 for emergency medical treatment information. |

In case of spills, fire, leaks or accident, call INFOTRAC at 1-800-535-5053

## STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage and disposal.
**PESTICIDE STORAGE:** Store in a cool, dry and well ventilated area. **DO NOT** store under wet conditions.
**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.
**CONTAINER HANDLING:**
**Nonrefillable Container (flexible-bag-all weights):** Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling, if available, or dispose of empty bag in a sanitary landfill or by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
**Nonrefillable Container (5 gal or less):** Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water 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 or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

See inside label booklet for additional Precautionary Statements, Directions for Use and Storage and Disposal Instructions

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Net Contents
**2.5 gallons**