

SPECIMEN LABEL

Agri Star®

QUINCLORAC	GROUP	4	HERBICIDE
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QUINSTAR® 4L

Herbicide

ACTIVE INGREDIENT:	
Quinclorac: 3,7-dichloro-8-quinolinecarboxylic acid	40.0%
OTHER INGREDIENTS:	60.0%
TOTAL:	100.0%

Contains 3.8 pounds of quinclorac per gallon

EPA Reg. No. 42750-169

EPA Est. No. 42750-MO-001

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID

IF SWALLOWED:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
IF INHALED:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

See inside booklet for additional PRECAUTIONARY STATEMENTS.

Manufactured For:

ALBAUGH, LLC

1525 NE 36th Street
Ankeny, Iowa 50021

FOR CHEMICAL SPILL, LEAK, FIRE, OR EXPOSURE, OR MEDICAL EMERGENCY, CALL CHEMTREC (800) 424-9300



Albaugh®
Your Alternative™

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, clothing, or eyes. Avoid breathing vapor or spray mist. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not re-use them. Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS STATEMENT

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

USER SAFETY RECOMMENDATIONS

Users should:

- 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.

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. Keep out of lakes, ponds and streams. Do not apply directly to water, areas where surface water is present, or to intertidal areas below the mean high water mark, except as specified on this label for use in rice. 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.

All applicable directions, restrictions, precautions and Conditions of Sales and Warranty are to be followed. This labeling must be in the user's possession during application.

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, or water, is:

- Coveralls
- Waterproof gloves
- Shoes plus socks

PRODUCT INFORMATION

QUINSTAR® 4L can be used for weed control in asparagus, blueberry, caneberry, cranberry, rhubarb, dry-seeded and water-seeded rice planting and production cultures, in fallow systems, grasses grown for seed, preplant wheat, preplant and in-crop sorghum, and non-crop areas. QuinStar® 4L is formulated as a liquid flowable designed for dilution with water and spraying with common agricultural spray equipment.

Mode of Action

QuinStar® 4L is a systemic herbicide with plant uptake occurring through both the foliage and roots. Resultant herbicide symptoms on susceptible plants include twisting, stunting, reddening and chlorosis. For annual plants, symptoms may take up to two weeks after application to develop with death occurring in about three weeks. For perennial weeds, symptoms may not be evident for several weeks after application and full effect may not be evident for 3 to 6 months.

Coverage

When making postemergence applications, weeds must be thoroughly covered with spray because foliar uptake of QuinStar® 4L by the target weed is important for optimum control. Large leaf canopies shelter smaller weeds and can prevent adequate spray coverage.

Sensitive Species

Do not allow QuinStar® 4L to drift onto other desirable plants belonging to the following plant families:

1. Solanaceae [tomato, potato, tobacco, eggplant, peppers (Capsicum), among others]
2. Umbelliferae (celery, parsley, carrots, among others)
3. Leguminosae (alfalfa, green bean, among others)
4. Convolvulaceae (sweet potato, among others)
5. Chenopodiaceae (spinach, sugar beet, among others)
6. Malvaceae (okra, among others)
7. Cucurbitaceae (watermelon, cantaloupe, squash, pumpkin, among others)
8. Compositae (lettuce, sunflowers, among others)
9. Linaceae (flax)

Do not allow spray containing QuinStar® 4L to drift onto areas where tomatoes are to be planted, have been planted, or onto emerged tomatoes, as severe injury will occur.

Refer to CROP SPECIFIC directions for complete Restrictions and Limitations and Application Instructions.

WEED RESISTANCE MANAGEMENT

Some weeds are known to develop resistance to herbicides that have been used repeatedly. While the development of herbicide resistance is well understood, it is not easily predicted. Therefore herbicides should be used in conjunction with the resistance management strategies in the area. If herbicide resistance should develop in the area, this product used alone may not continue to provide sufficient levels of weed control. If the reduced levels of control cannot be attributed to improper application techniques, improper use rates, improper application timing, unfavorable weather conditions or abnormally high weed pressure, a resistant strain of weeds may have developed.

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

To reduce the potential for weed resistance:

- Use this product in a rotation program with other classes of chemistry and modes of action.
- Always apply this product at the specified rates and in accordance with the use directions.
- Do not use less than specified label rates alone or in tank mixtures.
- Do not use reduced rates of the tank mix partner.
- For best results, this product should be applied when weeds are small.
- Scout fields carefully to determine the appropriate time for application.
- Scout fields carefully after application for performance in control of weeds.
- If resistance is suspected, contact the local or State agricultural advisors.

APPLICATION EQUIPMENT

Use only nozzles that will produce uniform spray patterns and thorough coverage, spaced up to 20 inches apart. Select nozzles designed to produce medium or coarser spray (ASABE standard S-572.1). Do not use controlled droplet applicator (CDA) nozzles as erratic coverage can cause inconsistent weed control. Do not use selective application equipment such as recirculating sprayers or wiper applicators. Drift reduction nozzles such as Delavan® Raindrop Drift Reduction Flat Spray Tip, RF Tips, XR Tee Jet™ Extended range Flat Spray Tips, or other brands of comparable capabilities are recommended.

GROUND APPLICATION

Whenever possible, spray mixtures containing QuinStar® 4L should be applied using ground spray equipment.

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.

Apply as a medium or coarser spray (ASABE standard S-572.1).

Do not release spray at a height greater than 30 inches above the ground.

Application Information:

Rice (Preplant/Pre-emergence and Delayed Pre-emergence):

Water Volume: Apply 10-40 gallons of water per broadcast acre.

Spray Pressure: Use 25-40 psi

Rice (Postemergence):

Water Volume: Apply 10-20 gallons of water per broadcast acre.

Spray Pressure: Use 25-40 psi

Fallow Systems, Grass Grown for Seed, Preplant Wheat, Preplant and In-Crop Sorghum, and Non-Crop Areas:

Water Volume: Apply 5-30 gallons of water per broadcast acre.

Spray Pressure: Use a maximum of 30 psi.

Cranberries:

Water Volume: Apply in a minimum of 10 gallons of water per broadcast acre.

Spray Pressure: Use 20-30 psi

Rhubarb:

Water Volume: Apply in a minimum of 10 gallons of water per broadcast acre.

Spray Pressure: Use 20-30 psi

AERIAL APPLICATION

If application with ground spray equipment is not possible, application by aircraft is acceptable (except where prohibited on this label), provided 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 8 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 as a medium or coarser spray (ASABE standard S-572.1).

Application Information:

Water Volume: Apply a minimum of 5 gallons of water per acre for Rice and 3-10 gallons of water per acre for all other uses.

Spray Pressure: Use a maximum 40 psi.

CHEMIGATION INSTRUCTIONS – CRANBERRY USE ONLY

QuinStar® 4L can be applied with chemigation only for use on cranberries.

Apply this product only through one or more of the following types of systems: sprinkler including solid set or hand move irrigation system(s).

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

Crop injury or lack of effectiveness can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Solid Set and Hand Move Irrigation Equipment: Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a thirty to forty-five minute period. Mix desired amount of product for acreage to be covered into quantity of water used during calibration and operate entire system at normal pressures recommended by the manufacturer of injection equipment used for amount of time established during calibration. Provide constant mechanical agitation in the mix tank to insure that the product will remain in suspension during the injection cycle. This product can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until pesticide is cleared from last sprinkler head.

SAFETY DEVICES

- (1) The systems designated above must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- (2) All pesticide injection pipelines must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

- (3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- (4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- (5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- (6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. (7) Do not apply when wind speed favors drift beyond the area intended for treatment.

SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

Public water systems means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The system must functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops or, in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

For additional instructions on safety precautions refer to statements (2), (3), (4), (6), and (7) in the section on SAFETY DEVICES.

MIXING ORDER

1. Water: Begin by agitating in a thoroughly clean sprayer tank three-quarters full of clean water.
2. Agitation: Maintain constant agitation throughout mixing and application.
3. Products in PVA bags: Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
4. Water-dispersible products (such as wettable powders, suspension concentrates, or suspoemulsions)
5. Water-soluble products
6. Emulsifiable concentrates: If an inductor is used, rinse it thoroughly after the component has been added.
7. Water-soluble additives: If an inductor is used, rinse it thoroughly after the component has been added.
8. Remaining quantity water

Maintain constant agitation during application.

COMPATIBILITY TEST FOR MIX COMPONENTS

Add components in the following sequence using 2 teaspoons for each pound or 1 teaspoon for each pint of specified label rate per acre.

1. Water: For 20 gallons per acre spray volume, use 3-1/3 cups (800 ml) of water. For other spray volumes, adjust rates accordingly. Use only water from the intended source at the source temperature.
2. Products in PVA bags: Cut an opening in the water-soluble PVA bag just large enough to use a teaspoon for measuring purposes. Use the opened water-soluble PVA bag first when preparing spray solution. Cap the jar and invert 10 cycles.
3. Water-dispersible products including QuinStar® 4L, such as dry flowables, wettable powders, suspension concentrates, or suspo-emulsions: For the 0.5 pint rate, use 1 teaspoon. For the 0.75 pint rate, use 1.5 teaspoons. Cap the jar and invert 10 cycles.
4. Water-soluble products: Cap the jar and invert 10 cycles.
5. Emulsifiable concentrates: (methylated seed oil or crop oil concentrate when applicable). Cap the jar and invert 10 cycles.
6. Water-soluble additives (AMS or UAN when applicable): Cap the jar and invert 10 cycles.
7. Let the solution stand for 15 minutes.
8. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. Do not use any spray solution that could clog spray nozzles.

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 grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift 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 backwards parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

The applicator must be familiar with and take into account the information covered in the Aerial Drift Reduction Information section below.

AERIAL DRIFT REDUCTION INFORMATION

INFORMATION ON 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 Inversions).

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 $\frac{3}{4}$ 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 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. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. Do not apply by air when wind speed is greater than 8 mph. Do not apply by ground when wind speed is greater than 10 mph.

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. Do not apply when air temperatures exceed 90°F.

TEMPERATURE INVERSIONS

Do not make applications during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a 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 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, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

CLEANING SPRAY EQUIPMENT

All mixing equipment and air spray equipment should be thoroughly cleaned before and after mixing and applying QuinStar® 4L.

CROP SPECIFIC USE INSTRUCTIONS

RICE

Rice is tolerant to QuinStar® 4L when used according to label use directions and under typical growing conditions. Adverse weather conditions or high use rate from spray overlap or other sources may contribute to leaf twisting, buggy whipping, or other abnormal growth characteristics. In broadcast or water-seeded rice, seed on the soil surface in direct contact with QuinStar® 4L is the most sensitive. These symptoms are typically short-lived and rice usually recovers without a significant stand loss or other injury.

Table 1. Timing and Application Rate Table – RICE

Weed Species	Preplant/Pre-emergence and Delayed Pre-emergence Soil Applications (Rate per Acre)			Postemergence Foliar Applications (Rate per Acre)	
	Light- textured sandy loams	Medium-textured silts, loams, silt loams, sandy clay loams	Heavy-textured silty clays, silty clay loams, clay loams, clays, gumbo and buckshot	Small weeds controlled and short-term soil residual	Larger weeds controlled and long-term soil residual
Annual Grasses: barnyardgrass, junglerice, broadleaf signalgrass, large crabgrass	8 – 11 fluid ounces	12 fluid ounces	16 fluid ounces	8 – 12 fluid ounces up to 2 inches	8 – 16 fluid ounces up to 3 inches
Broadleaf Weeds: hemp sesbania, jointvetches, morninggloories (cypressvine, entireleaf, ivyleaf, palmleaf, purple moonflower, pitted, tall), eclipta	8 – 11 fluid ounces	12 fluid ounces	16 fluid ounces	8 – 12 fluid ounces up to 2 leaves	12- 16 fluid ounces up to 3 leaves
Alligatorweed (partial control)*	n/a	n/a	n/a	16 fluid ounces	n/a

*Rice must be in at least the 2 leaf stage. For best control, establish permanent flood within 2 days after QuinStar® 4L application.

WATER MANAGEMENT - RICE

(Irrigation and Flood Water)

Optimum weed control with QuinStar® 4L is highly dependent on proper use of irrigation, including effective flush irrigation to maintain moist soil conditions and timely establishment of permanent flood water. Soil applications and residual activity from foliar applications require moist soil conditions for weeds to uptake the herbicide and be controlled. Therefore, keep the soil moist to maintain weed control. If the soil is permitted to dry and weeds emerge, flush irrigate the field to reactivate the residual activity of the herbicide while weeds are small (1" or less). If required, make additional QuinStar® 4L applications as needed, but limit total usage to 16 fluid ounces per acre per year. In water-seeded rice plantings and in pin-point flood culture, drain all water from the rice field and ensure seedling rice has at least two leaves before applying QuinStar® 4L. Rice seedlings without 2 leaves may be injured. Flood water levees should be formed prior to applying QuinStar® 4L for more consistent weed control. Residual weed control on the levee is dependent on moist soil conditions on the levee. If soil on the levee dries, erratic weed control may result.

If a heavy rain occurs after applying QuinStar® 4L, drain the excess water from the rice field to avoid possible rice injury.

APPLICATION INSTRUCTIONS - RICE

Whenever possible, spray mixtures should be applied using ground spray equipment.

Ensure ground and aircraft spray equipment is properly calibrated and spray coverage is uniform. Always use spray nozzles and other equipment designed to reduce accidental spray drift. Always use drift control products and limit spray applications to periods when wind and other weather conditions do not favor spray drift beyond the border of the rice field.

Preplant/Pre-emergence and Delayed Pre-emergence:

Water Volume: Apply 10-40 gallons of water per broadcast acre.

Spray Pressure: Use 25-40 psi.

Postemergence:

Water Volume: Apply 10-20 gallons of water per broadcast acre.

Spray Pressure: Use 25-40 psi.

Air Application:

Water Volume: Apply a minimum of 5 gallons of water per acre.

Spray Pressure: Use a maximum of 40 psi.

Soil Applications:

QuinStar® 4L can be applied to the soil surface before, during, or after planting of dry-seeded rice. When applied to the soil surface and activated by rainfall or irrigation, roots of susceptible grasses and broadleaf weeds uptake the herbicide resulting in commercially acceptable control before weed competition reduces rice productivity. Soil texture and clay content determines the proper use rate for optimum weed control, with heavier soil textures and higher clay content requiring higher use rates as directed in Table 1.

Foliar Applications:

QuinStar® 4L can be applied to the foliage of susceptible grasses and broadleaf weeds in dry-seeded and water-seeded rice. When applied to weed foliage, leaves and stems partially uptake the herbicide. It is essential that rice be flushed after a foliar application to maximize root absorption resulting in commercially acceptable weed control. Additionally, the herbicide reaching the soil surface moves into the soil with rainfall or irrigation providing residual weed control. In general, smaller weeds are more effectively controlled with lower use rates, with larger weeds requiring higher use rates for more complete control. The use rates in Table 1 are directed for foliar applications to provide commercially acceptable control of susceptible weeds based on weed size or growth stage.

ADDITIVES - RICE

For postemergence applications only, adding 2 pints of crop oil concentrate per acre will improve leaf and stem uptake of the herbicide and enhance weed control.

Drift Control products:

Drift control products should always be added to the spray solution to affect spray droplet size and other characteristics, reducing the potential of off-target accidental spray drift.

TANK MIXING INFORMATION - RICE

While QuinStar® 4L herbicide is effective in controlling a broad spectrum of annual grasses and broadleaf weeds, more effective weed control may be obtained, or additional weeds may be controlled by tank mixing QuinStar® 4L with other herbicides labeled for weed control in rice. The table below describes some weed situations where tank mixing is appropriate. Read and follow all use directions for each herbicide in the spray mixture. 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 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.

Table 2. Tank Mixes - RICE

Weed	Tank Mix Information
Cocklebur	QuinStar® 4L: 8 - 16 fluid ounces Bentazon (4 lbs AI / gallon): 1.5-2.0 pints
Dayflower	QuinStar® 4L: 8 - 16 fluid ounces Bentazon (4 lbs AI / gallon): 1.5-2.0 pints
Hemp Sesbania	a) QuinStar® 4L: 8 - 16 fluid ounces Acifluorfen ¹ (2 lbs AI / gallon): 0.5-1.0 pint ¹ b) QuinStar® 4L: 8 - 16 fluid ounces Clomazone (3 lbs AI / gallon): 0.8-1.6 pints
Sprangletop	a) QuinStar® 4L: 8 - 16 fluid ounces Thiobencarb (8 lbs AI / gallon): 0.5 - 1.0 pint ² b) QuinStar® 4L: 8 - 16 fluid ounces Pendimethalin (3.3 lbs AI / gallon): 2.4 pints ³ c) QuinStar® 4L: 8 - 16 fluid ounces Clomazone (3 lbs AI / gallon): 0.8-1.6 pints
Yellow Nutsedge	QuinStar® 4L: 8 - 16 fluid ounces Bentazon (4 lbs AI / gallon): 1.5 - 2.0 pints
Morningglory	QuinStar® 4L: 8 - 16 fluid ounces Clomazone (3 lbs AI / gallon): 0.8-1.6 pints
Heavy infestations of broadleaf weeds	QuinStar® 4L: 8 - 16 fluid ounces Bentazon (2.67 lbs AI / gallon) + Acifluorfen (1.33 lbs AI / gallon) premix: 1.5 pints

(continued)

Table 2. Tank Mixes - RICE (cont.)

Weed	Tank Mix Information
For weeds and grasses not controlled by QuinStar® 4L	QuinStar® 4L: 8 - 16 fluid ounces propanil: 2-4 pounds a.i.
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 soil surface after planting, before rice emergence, and before sprangletop emergence.	

USE PRECAUTIONS:

- Do not use QuinStar® 4L on precision-cut fields until the second rice crop as injury can occur.
- Do not apply to rice fields with a history of poor water-holding capacity (porous subsoil), as erratic weed control may result.

USE RESTRICTIONS:

- Maximum annual use rate: Do not apply more than 16 fluid ounces of QuinStar® 4L herbicide (0.48 lbs AI) per acre, per year.
- Preharvest Interval (PHI): Do not apply QuinStar® 4L within 40 days of harvest. Do not apply QuinStar® 4L to rice that is heading.
- State Specific Restrictions: Because there are additional state restrictions in Arkansas, contact the Arkansas Plant Board or a representative for specific instructions about applying QuinStar® 4L in Arkansas. In Arkansas, QuinStar® 4L 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. Furthermore, 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.
- Do not use treated rice fields for the aquaculture of edible fish and crustaceans (crayfish).
- 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 QuinStar® 4L application to irrigate any crop other than rice.
- Do not use in California or Florida.
- QuinStar® 4L cannot be used to formulate or reformulate any other pesticide product.
- Do not apply this product through any type of irrigation system.

Rotational Crops:

- Do not plant any crop other than rice for a period of 309 days following application.
- Eggplants and tobacco may not be planted within 12 months on the fields treated with QuinStar® 4L.
- Tomatoes and carrots may not be planted within 24 months on fields treated with QuinStar® 4L.
- In case of crop failure, only rice may be immediately replanted.

Soil Type:

- Do not use QuinStar® 4L on sand and loamy sand soils.
- Do not apply QuinStar® 4L on any rice soil that does not have an impermeable hard pan to provide good water holding capacity.

Spray Drift:

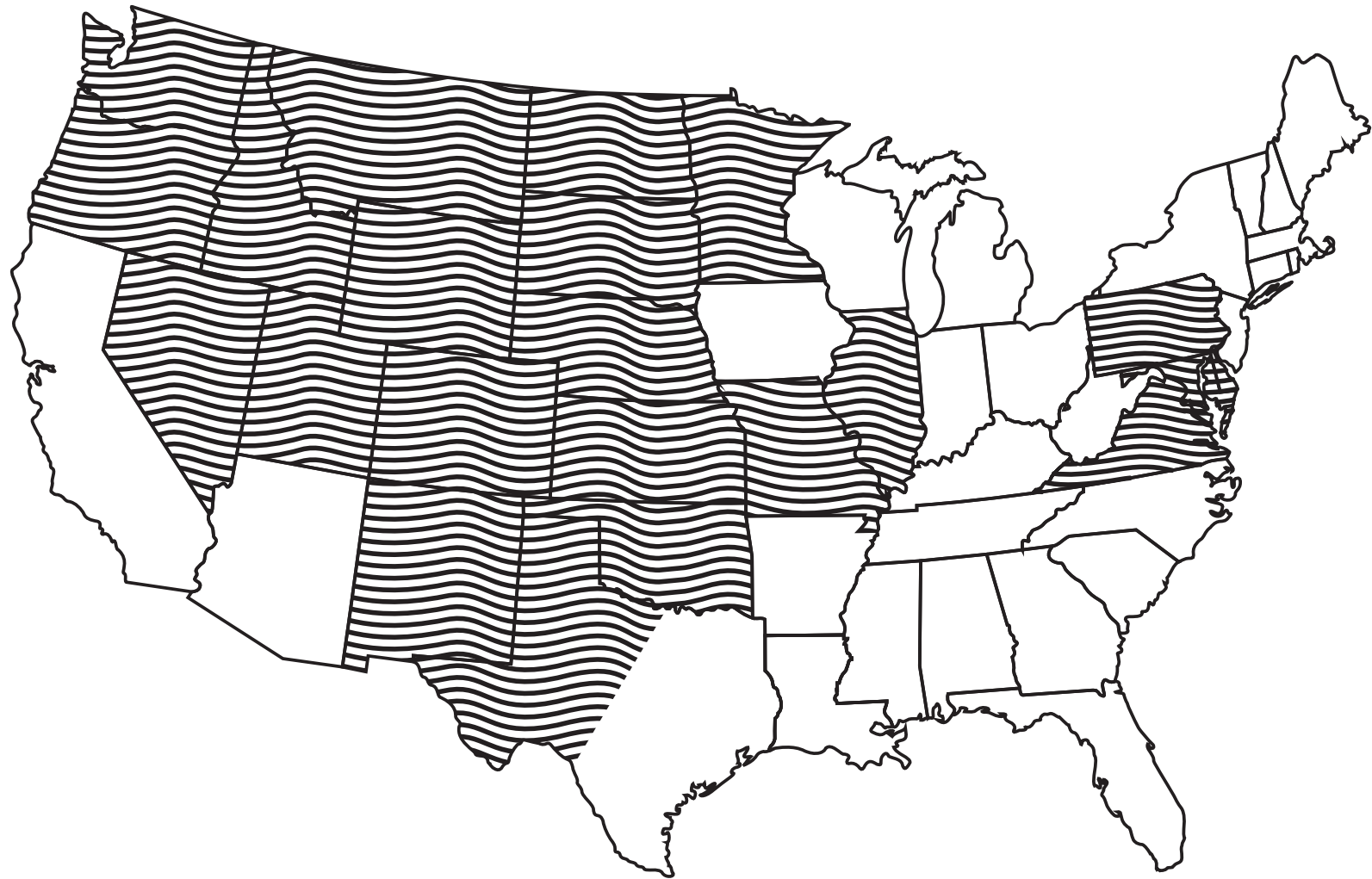
- Do not allow QuinStar® 4L to drift outside of the intended target areas.
- Ground application: Do not apply when wind speed is greater than 10 mph.
- Aerial application: Do not apply when wind speed is greater than 8 mph.
- Temperature Inversions: Do not apply QuinStar® 4L when air temperatures exceed 90° F.

**CROP SPECIFIC DIRECTIONS -
FALLOW SYSTEMS, GRASS GROWN FOR SEED, PREPLANT WHEAT, PREPLANT AND IN-CROP SORGHUM
AND NON-CROP AREAS (including Roadsides, Fencelines and Rights-Of-Way)**

Apply QuinStar® 4L only in the following states CO, DE, ID, IL, KS, MD, MN, MO, MT, ND, NE, NM, NV, NM, NV, OK, OR, PA, SD, UT, WA, WY, VA and only 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, Harlery, 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, Schackelford, Scurry, Sherman, Sterling, Stonewall, Swisher, Taylor, Terry, Throckmorton, Wheeler, Wichita, Wilbarger, Wise, Yoakum, and Young.

Be sure to obtain and follow all Texas state requirements for QuinStar® 4L uses.

Figure 1. Application Region for QuinStar® 4L - fallow systems, grass grown for seed, pre-plant wheat, pre-plant and in-crop sorghum non-crop areas.



Application Instructions – Fallow Systems, Grass Grown for Seed, Preplant Wheat, Preplant and In-Crop Sorghum, and Non-Crop Areas

Based on the uses described in this label, QuinStar® 4L should be applied by ground application equipment. QuinStar® 4L may be applied as either a broadcast or spot spray application.

QuinStar® 4L may be applied using aerial application equipment except in the states and counties listed in Table 4. Applications must be made to actively growing weeds.

For most broadleaf weeds, the most effective control will result from apply QuinStar® 4L early, when weeds are small. Delaying application permits weeds to exceed the maximum size and may prevent adequate control. In irrigated areas, it may be necessary to irrigate before treatment to ensure active weed growth.

Ground Application (Broadcast)

Water Volume: Use 5-30 gallons of water per broadcast acre. When weed foliage is dense, higher spray volumes may be required.
 Spray Pressure: Use a maximum of 30 psi (measured at the boom, not at the pump or in the line).

Air Application:

Water Volume: Apply in 3-10 gallons of water per acre.
 Spray Pressure: Use a maximum of 40 psi.

When used as directed, QuinStar® 4L will provide suppression or control of weed species listed in the following table:

Table 3. Weeds Controlled or Suppressed

Weeds Controlled	Weeds Suppressed*
<u>Annual Grasses</u> Barnyard Grass Crabgrass, large Foxtail, giant, green, yellow Signalgrass, broadleaf <u>Annual Broadleaves</u> Bedstraw, catchweed (cleavers) Clovers Lettuce, prickly Morningglory spp. Flax, volunteer <u>Perennial Broadleaves</u> Bindweed ¹ , field, hedge	<u>Annual Broadleaves</u> Kochia Lambsquarters, common Ragweed, common, giant Sunflower, wild Thistle ³ , Russian Velvetleaf <u>Perennial Broadleaves</u> Dandelion Sowthistle ³ , perennial Spurge ² , leafy Thistle ³ , Canada

*Do not exceed a total of 1.5 pints of QuinStar® 4L (0.71 lbs AI) per acre per calendar year. Apply QuinStar® 4L at yellow bract (pre-bloom) or in the fall prior to the first killing frost.

For improved control, add a tank mix partner that is active on listed species.

¹ Refer to the section below entitled “Field and Hedge Bindweed Control” for use directions.

² Use 0.75 – 1.5 pints of QuinStar® 4L per acre in non-crop areas for suppression and annual growth control, but do not exceed a total of 1.5 pints of QuinStar® 4L per acre per calendar year. Apply QuinStar® 4L at yellow bract (pre-bloom) or in the fall prior to the first killing frost.

³ Use 0.75 pints of QuinStar® 4L per acre for suppression and annual growth control, but do not exceed a total of 1.5 pints of QuinStar® 4L (0.71 lbs AI) per acre per calendar year. Apply QuinStar® 4L at rosette stage or bud stage. Avoid application when seed stalk is bolting.

For most broadleaf weeds, the most effective control will result from applying QuinStar® 4L early, when weeds are small. Delaying application permits weeds to exceed the maximum size and may prevent adequate control. In irrigated areas, it may be necessary to irrigate before treatment to ensure active weed growth.

FIELD AND HEDGE BINDWEED CONTROL

For most effective bindweed control, apply QuinStar® 4L herbicide in the fall just prior to the first killing frost. Bindweed plants should be actively growing and at least 4 inches long. If tillage is a part of local post-harvest practices, allow a minimum of 30 days for bindweed plants to re-grow after tillage prior to application. For best long-term bindweed control, make yearly applications of QuinStar® 4L at 0.5 – 0.75 pints per acre in the Fall. Use the higher rate for dense populations or large plants.

QuinStar® 4L may be applied as either a broadcast or spot spray application. Applications must be made to actively growing weeds.

SPRAY ADDITIVES

To achieve consistent weed control, the use of spray additive(s) with QuinStar® 4L is required. The recommended spray additive with QuinStar® 4L is methylated seed oil. The use of crop oil concentrate with QuinStar® 4L is also permitted. A nitrogen fertilizer source (AMS or UAN) can be added to enhance efficacy but cannot be used in place of methylated seed oil or crop oil concentrate. Refer to the following table for spray additive rates.

SPRAY ADDITIVE	GROUND APPLICATION
Methylated Seed Oil	1.0 – 2.0 pints ²
Crop Oil Concentrate	2.0 pints
AMS ¹	2.5 pounds
UAN Solution ¹	0.5 – 1 gallon

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 contain either a petroleum or vegetable oil base and must meet all of the following criteria:

- be non-phytotoxic,
- contain only EPA-exempt ingredients,
- provide good mixing quality in the jar test, and
- be successful in local experience.

The exact composition of suitable products will vary; however, vegetable and petroleum oil concentrates should contain emulsifiers to provide good mixing quality. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils.

For additional information, see Compatibility Test for Mix Components.

For bindweed control in Oklahoma, New Mexico and the designated counties of Texas, the use of methylated seed oil plus AMS is mandatory with QuinStar® 4L herbicide when it is applied alone.

NITROGEN FERTILIZER SOURCE:

- Urea ammonium nitrate (UAN): Commonly referred to as 28%, 30%, or 32% nitrogen solution. Do not use brass or aluminum nozzles when spraying UAN.
- 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 those mentioned, Albaugh does not recommend applying AMS if applied in less than 10 gallons per acre because of potential problems with precipitation in reduced volumes. Use AMS only if 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. Use high-quality AMS to avoid plugging spray nozzles. The AMS must be readily soluble in water and contain 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. 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 un-dissolved 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

Alternatively, an 80% active nonionic spray surfactant may only be used when QuinStar® 4L is tank mixed with other products that restrict the use of oil additives. However, the use of nonionic surfactant may result in reduced weed control with QuinStar® 4L. The standard label recommendation for nonionic surfactant is 1 quart per 100 gallons of water (0.25% vol./vol.). Applications with nonionic surfactant require the addition of a nitrogen fertilizer source.

TANK MIXING INFORMATION - FALLOW SYSTEMS, GRASS GROWN FOR SEED, PRE-PLANT WHEAT, PRE-PLANT AND IN-CROP SORGHUM, AND NON-CROP AREAS (including Roadsides, Fencelines and Rights-Of-Way)

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.

Tank Mix Partners/Components

Use the following tank mixes to improve control of the weeds listed as suppressed. The following herbicides may be tank mixed with QuinStar® 4L herbicide according to the specific tank mixing instructions in this label and respective product labels. For all recommended tank mixes, use a rate of 0.5 – 0.75 pints per acre of QuinStar® 4L.

Physical incompatibility, reduced weed control, or crop injury may result from mixing QuinStar® 4L with other pesticides, additives, or fertilizers. Local agricultural authorities may be a source of information when using other than recommended tank mixes.

- 2,4-D
- Atrazine
- Bromoxynil
- Dicamba
- Diflufenzopyr
- Dimethenamid-P
- Glyphosate
- Paraquat
- Prosulfuron

Premixes of:

- Dicamba + 2,4-D or Atrazine or Diflufenzopyr or Glyphosate
- Dimethenamid-P + Atrazine
- Glyphosate + 2,4-D

USE PRECAUTIONS:

- Do not apply to weeds or grasses under stress due to lack of moisture, herbicide injury, mechanical injury or cold temperatures, as unsatisfactory control may result.
- Do not apply to crops subjected to stress conditions such as hail damage, flooding, drought, injury from other herbicides, or widely fluctuating temperatures, as crop injury may result.
- Rainfast period: QuinStar® 4L is rainfast 6 hours after application.

USE RESTRICTIONS:

- Maximum annual use rate: Do not apply more than a total of 1.5 pints of QuinStar® 4L® herbicide (0.71 lbs AI) per acre per year.
- Restricted Entry Interval (REI): 12 hours.
- Crop Rotation Restrictions: In case of crop failure, only Spring or Winter wheat or grain sorghum may be immediately replanted. Do not plant any other crop other than Spring or Winter wheat or grain sorghum for 309 days (10 months) following application. For alfalfa, clover, dry beans, flax, peas, lentils, safflower, Solanaceous crops listed below, and sugarbeets, do not replant for 24 months and conduct a bioassay prior to planting any of these crops.
- Do not use selective application equipment such as recirculating sprayers, wiper applicators, or shielded applicators.
- Do not apply by ground when wind speed is greater than 10 mph. Do not apply by air when wind speed is greater than 8 mph.
- Do not apply through any type of irrigation equipment.
- Do not apply by air in specific states or counties listed in Table 4.
- DO NOT graze livestock or cut treated area for hay within 7 days after treatment.
- Do not apply to water or to areas where surface water is present.
- Do not apply to irrigation ditches or areas that act as a channel for water entering cropland.

Table 4. Aerial Use Restrictions

Due to the possible presence of endangered plant species that might be impacted by aerial application of QUINCLORAC 4L SWF herbicide, do not apply QUINCLORAC 4L SWF by air in the following counties.

STATE	COUNTIES
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
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, Brazos, Burleson, Coke, El Paso, Fort Bend, Freestone, Harris, Hays, Hudspeth, Jim Wells, Kerr, Kimble, Kleberg, Leon, Live Oak, Madison, Mitchell, Nueces, Pecos, Refugio, 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

CROP SPECIFIC DIRECTIONS - GRASS GROWN FOR SEED

For use in the following grasses grown for seed:

Cool Season Grasses:

- Bromegrass; smooth, meadow, smooth X meadow cross
- European Dunegrass
- Fescue; fine, tall
- Junegrass
- Kentucky Bluegrass
- Quackgrass
- Needlegrass; green
- Orchardgrass
- Ryegrass; annual, indian, perennial
- Wheatgrass; bluebunch, crested, fairway, fairway X crested cross, intermediate, pubescent, siberian, slender, tall, thickspike, western, bluebunch X quack cross
- Wildrye; altai, basin, beardless, dariurian, mammoth, Russian

Warm Season Grasses:

- Bermudagrass
- Bluestem; big, little, sand
- Gramma; blue, side-oats
- Sandreed; prairie
- Switchgrass

Apply QuinStar® 4L herbicide at 0.5 pints per acre for control of annual grasses and broadleaf weeds. Apply QuinStar® 4L for bindweed control after grass seed harvest and hay removal but before the first killing frost. Refer to the section entitled “Field and Hedge Bindweed Control” for use directions,

Tank Mixing Information:

Other registered products may be tank mixed with QuinStar® 4L. Read and follow the applicable Restrictions and Limitations and Directions For Use on all products involved in tank mixing. The most restrictive labeling applies to tank mixes.

FALLOW SYSTEMS OR PRE-PLANT WHEAT OR PRE-PLANT SORGHUM

(DO NOT use on pre-plant wheat in the following states: ID, MT, NV, OR, UT, WA, or WY)

QuinStar® 4L can be applied in fallow areas or pre-plant wheat (do not apply in ID, MT, NV, OR, UT, WA or WY) or pre-plant grain sorghum at 0.5 pints per acre for control of annual grasses and broadleaf weeds (see Table 3). For bindweed control with QuinStar® 4L, refer to the section entitled "Field and Hedge Bindweed Control" for use directions. When QuinStar® 4L is applied as a Pre-plant treatment in wheat, plant wheat at least 1" deep.

Shallow planting (<1" deep) may result in possible crop injury when wheat is subjected to drought or other stress conditions.

Fallow Tank Mixes:

Other registered products may be tank mixed with QuinStar® 4L. Read and follow the applicable Restrictions and Limitations and Directions For Use on all products involved in tank mixing. The most restrictive labeling applies to tank mixes.

- 2,4-D
- Dicamba
- Glyphosate

Premixes of:

- Dicamba + Glyphosate or Diflufenzopyr
- Glyphosate + 2,4-D

IN-CROP SORGHUM

Apply QuinStar® 4L to grain sorghum at 0.5 - 0.75 pints per acre from preemergence to postemergence (to 12 inch tall sorghum) for control of annual grasses and broadleaf weeds. For best annual grass control, QuinStar® 4L should be applied at 0.5 - 0.75 pints per acre in a tank mix with atrazine at 0.5-1.0 pound a.i. per acre when weeds are less than 2" tall. Do not use liquid fertilizer as a carrier for postemergence applications of QuinStar® 4L to grain sorghum.

In Oklahoma, New Mexico, and in the designated counties in Texas, apply only 0.75 pints of QuinStar® 4L per acre to in-crop sorghum.

Table 5. Tank Mix Use Rate Per Acre with QuinStar® 4L

Herbicide Tank Mix Partner	Fallow and Preplant Wheat	Preplant Sorghum	Post-emerge Sorghum
2,4-D	0.375 - 1.0 lb ai	0.375 - 1.0 lb ai	0.125 - 0.5 lb ai
Atrazine	—	0.5 - 1.0 lb ai	0.5 - 1.0 lb ai
Dicamba (4 lbs ae / gallon)	4- 16 oz.	4- 16 oz.	8 oz.
Prosulfuron	—	—	0.25 oz.
Glyphosate (3.0 lbs ae / gallon)	12 - 32 oz.	12 - 32 oz.	—
Bromoxynil (2.0 lbs ai / gallon)	—	—	16 oz.
Glyphosate (1.1 lbs ae / gallon + Dicamba (0.5 lbs ae / gallon) Premix	22 - 44 oz.	22 - 44 oz.	—
Glyphosate (0.9 lbs ae / gallon) + 2,4-D (1.5 lbs ae / gallon) Premix	32 - 54 oz.	32 - 54 oz.	—
Dimethenamid-p (1.7 lbs ai / gallon) + Atrazine (3.3 lbs ai / gallon) Premix	—	—	40 - 64 oz.

NON-CROP AREAS**(Roadsides, Fencelines and Rights-Of-Way)**

QuinStar® 4L may be applied to non-crop areas including fence lines, roadsides, highway medians, utilities, railroad and pipeline rights-of-way. QuinStar® 4L may be applied to non-cropland areas for the control of certain weeds in the Noxious Weed Control Programs, Districts or Areas including broadcast or spot treatments. Use 0.5 - 0.75 pints of QuinStar® 4L per acre for control of annual weeds, or 0.75 - 1.5 pints per acre for other perennial weeds (see Table 3), but do not exceed a total of 1.5 pints of QuinStar® 4L per acre per calendar year. For bindweed control with QuinStar® 4L, refer to the section entitled "Field and Hedge Bindweed Control" for use directions.

Non-Crop Tank Mixes:

Other registered products may be tank mixed with QuinStar® 4L. Read and follow the applicable Restrictions and Limitations and Directions For Use on products involved in tank mixing. The most restrictive labeling applies to tank mixes.

- 2,4-D
- Dicamba
- Glyphosate

Premix of:

- Distinct® (diflufenzopyr + dicamba)

PASTURE (including pasture grown for hay), RANGELAND, CONSERVATION RESERVE PROGRAM LAND (CRP), and SWITCHGRASS Establishment and Maintenance

QuinStar® 4L may be used in established pasture, rangeland, Conservation Reserve Program land (CRP), and switchgrass establishment and maintenance as a postemergence product with residual control.

QuinStar® 4L is taken into the plant through both the foliage and the roots. Adequate rainfall after application and good soil moisture is important for root uptake. Uniform spray coverage is important for consistent weed control.

Visual symptoms of weed control with QuinStar® 4L include twisting, stunting, reddening, and chlorosis followed by necrosis and death. Visual symptoms of weed control may take more than 3 weeks following application to develop on perennial weeds (see Table 1. Target Weeds). The full effect of QuinStar® 4L on perennial weeds may not be evident for 3 to 6 months after application. For annual weeds, visual symptoms may take up to 2 weeks following application to develop.

Table 1. Target Weeds

WEEDS CONTROLLED	WEEDS SUPPRESSED*
Annual Grasses	Annual Broadleaves
Barnyardgrass	Kochia
Crabgrass, large	Lambsquarters, common
Foxtail, giant	Ragweed, common
Foxtail, green	Ragweed, giant
Foxtail, yellow	Sunflower, wild
Signalgrass, broadleaf	Thistle, Russian
	Velvetleaf
Annual Grasses	Annual Broadleaves
Bedstraw, catchweed	Dandelion
Clovers	Sowthistle. Perennial
Lettuce, prickly	Thistle, Canada
Morningglory, spp.	
Flax, volunteer	
Perennial Broadleaves	
Bindweed, field	
Bindweed, hedge	
Spurge, leafy	

*For improved control, add a labeled tank mix product that is active on listed species

APPLICATION INSTRUCTIONS

QuinStar® 4L® herbicide may be applied at 4.5 to 25.0 fluid ounces/acre to control grasses and broadleaf weeds, including field bindweed and leafy spurge (see Table 1. Target Weeds).

Field Bindweed Control

QuinStar® 4L may be applied in the fall prior to the first frost. Applications of QuinStar® 4L for bindweed control should be made to actively growing bindweed (at least 4 inches of succulent growth). For optimum long-term control of bindweed, QuinStar® 4L should be used in a three-year planned program applying 8.0 fluid ounces/acre the first year and 4.5 to 8.0 fluid ounces/acre in subsequent years.

Leafy Spurge Control

Make applications of QuinStar® 4L for control of leafy spurge either pre-bloom (at yellow bract) or in the fall before the first frost. Apply QuinStar® 4L at a rate of 25.0 fluid ounces/acre, or as a tank mix at 12.5 fluid ounces/acre plus Overdrive® herbicide at the labelled rate. QuinStar® 4L applied alone at 12.5 fluid ounces/acre will provide only suppression of leafy spurge. See Table 2. Application Rates for specific rates.

Table 2. Application Rates

Target Weeds	Rate per Acre (fluid ounces product)
Grass and broadleaf control	8.0 to 12.5
Bindweed control	8.0
Bindweed maintenance	4.5
Leafy spurge control	12.5* to 25.0

*Will provide only suppression, must be tankmixed with Overdrive for effective control

SPRAY ADDITIVES

QuinStar® 4L should be applied with 1.5 pints/acre of methylated seed oil or 2.0 pints/acre of crop oil concentrate. A nitrogen fertilizer source [ammonium sulfate (AMS) at 2.5 lbs/acre or urea ammonium nitrate (UAN) at 2 to 4 qts/acre] may also be added to enhance product performance.

TANK MIXING INFORMATION

QuinStar® 4L may be tank mixed with other herbicides labeled for use in pasture and rangeland unless prohibited on the respective product label. The most restrictive labeling applies to tank mixes.

Table 3. QuinStar® 4L may be used in the following pasture and rangeland grasses

Cool Season Grasses
Bromegrass: smooth, meadow, smooth X meadow cross
European dunegrass
Fescue: fine ¹ , tall
Junegrass
Kentucky bluegrass
Needle-and-thread
Needlegrass: green
Orchardgrass
Ryegrass: annual, Indian, perennial
Wheatgrass: bluebunch, bluebunch X quack cross, crested, fairway, fairway X crested cross, intermediate, pubescent, Siberian, slender, tall, thickspike, Western
Wildrye: Altai, basin, beardless, Dahurian, mammoth, Russian
¹ Apply QuinStar® 4L to fine fescue only when it is part of a blend.
Warm Season Grasses
Bermudagrass ²
Bluestem: big, little, sand
Buffalograss
Eastern gamagrass
Grama: blue, side-oats
Indiangrass
Lovegrass
Sandreed: prairie
Switchgrass
² Applications of QuinStar® 4L to Bermudagrass may result in temporary yellowing (chlorosis) under certain conditions.

Switchgrass establishment and maintenance for biofuel, forage, wildlife habitat, and conservation plantings

QuinStar® 4L may be used for the establishment and maintenance of switchgrass. Apply 8.0 to 12.5 fluid ounces/acre QuinStar® 4L at planting or as an early postemergence treatment for weed control in newly planted switchgrass. QuinStar® 4L may be applied with other labeled herbicides to improve the spectrum of weeds controlled during the establishment and maintenance of switchgrass.

USE PRECAUTIONS:

- Rainfast Period: QuinStar® 4L is rainfast 6 dry hours after application.

USE RESTRICTIONS:

- Maximum Annual Use Rate: DO NOT apply more than a total of 25.0 fluid ounces of QuinStar® 4L (0.74 lbs AI) per acre per year.
- Restricted-entry Interval (REI): 12 hours
- Crop Rotation Restrictions: Refer to and follow the EPA-approved container label for specific information on crop rotations following QuinStar® 4L application.
- Wind Speed for Ground Applications: DO NOT apply QuinStar® 4L when wind is blowing more than 10 mph.
- DO NOT apply to weeds under stress due to lack of moisture, flooding, hail damage, herbicide injury, mechanical injury, or cold temperatures because unsatisfactory control may result.
- DO NOT use selective application equipment such as recirculating sprayers, wiper applicators, or shielded applicators.
- DO NOT apply to water or to areas where surface water is present.
- DO NOT apply to irrigation ditches or areas that act as a channel for water entering cropland.
- DO NOT apply through any type of irrigation equipment.
- DO NOT apply QuinStar® 4L using aerial equipment in specific states or counties listed in QuinStar® 4L herbicide Aerial Use Restrictions.
- DO NOT allow QuinStar® 4L to drift onto other desirable plants, especially sensitive crops belonging to the following plant families:
 - Solanaceae* [tomato, potato, tobacco, eggplant, peppers (*Capsicum*), among others]
 - Umbelliferae* (celery, parsley, carrots, among others)
 - Leguminosae* (alfalfa, green bean, among others)
 - Convolvulaceae* (sweet potato, among others)
 - Chenopodiaceae* (spinach, sugar beet, among others)
 - Malvaceae* (okra, among others)
 - Cucurbitaceae* (watermelon, cantaloupe, squash, pumpkin, among others)
 - Compositae* (lettuce, sunflowers, among others)
 - Linaceae* (flax)
- DO NOT allow spray containing QuinStar® 4L to drift onto areas where tomatoes are to be planted, have been planted, or onto emerged tomatoes because severe injury will occur.
- DO NOT graze livestock or cut treated area for hay within 7 days after treatment.

STATE-SPECIFIC RESTRICTIONS

Because there are additional state restrictions in Arkansas, contact the Arkansas Plant Board or a representative for specific instructions about applying QuinStar® 4L in Arkansas.

In Arkansas, QuinStar® 4L (quinclorac) must not be applied 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.

Furthermore, NO AERIAL APPLICATION is allowed in 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 or any other county in Arkansas.

ASPARAGUS

Weeds Controlled:

Field bindweed, hedge bindweed

Dosage and Frequency/Timing of Applications:

Make one broadcast, soil application of up to 12.6 fluid ounces per acre (0.375 lb ai/A) of QuinStar® 4L after the last harvest of the season and prior to the first frost.

A crop oil concentrate at a rate of 2 pints per acre may be included in the spray mixture.

Dilution Rate:

Use a minimum of 10 gallons of water per acre by ground application only.

Tank Mixes:

Other registered products may be tank mixed with QuinStar® 4L. Read and follow the applicable Restrictions and Limitations and Directions For Use on products involved in tank mixing. The most restrictive labeling applies to tank mixes.

USE PRECAUTIONS:

- Do not apply to crops subjected to stress conditions such as hail damage, flooding, drought, injury from other herbicides, or widely fluctuating temperatures, as crop injury may result.

USE RESTRICTIONS:

- Maximum annual use rate: Do not apply more than a total of 12.6 fluid ounces (0.375 lbs of a.i.) of QuinStar® 4L herbicide per acre per year.
- Do not make more than 1 application per year.
- Crop Rotation Restrictions:
- In case of crop failure, do not plant any other crop other than Spring or Winter wheat or grain sorghum for 309 days (10 months) following application. For alfalfa, clover, dry beans, flax, peas, lentils, safflower, Solanaceous family (and other sensitive species listed in PRODUCT INFORMATION section) crops and sugarbeets, do not replant for 24 months and conduct a bioassay prior to planting any of these crops.
- Do not use selective application equipment such as recirculating sprayers, wiper applicators, or shielded applicators.
- Do not apply by ground when wind speed is greater than 10 mph.
- Do not apply by air.
- Do not allow livestock to graze in treated areas.
- Do not apply to irrigation ditches or areas that act as a channel for water entering cropland.

BLUEBERRY

(And other Bushberries in Sub-Group 13-07B including Aronia berry; buffalo currant; Chilean guava; cranberry, highbush; currant, black; currant, red; elderberry; European barberry; gooseberry; honeysuckle, edible; huckleberry; jostaberry; Juneberry (Saskatoon berry); lingonberry; native currant; salal; sea buckthorn; cultivars, varieties, and/or hybrids of these)

(Do not apply to strawberries)

Weeds Controlled:

Field bindweed, hedge bindweed, barnyardgrass, Canada thistle and large crabgrass.

Dosage and Frequency/Timing of Applications:

For the first application apply up to 12.6 fluid ounces per acre (0.375 lb ai/A) of QuinStar® 4L at the end of dormancy, prior to budbreak. For highbush blueberries and other bushberries, apply as a banded, soil application on each side of the blueberry plants. For lowbush blueberries apply as a broadcast, soil application.

A second application may be made up to 30 days prior to harvest. For highbush blueberries and other bushberries, apply up to 12.6 fluid ounces per acre (0.375 lb ai/A) of QuinStar® 4L as a banded application to the ground on each side of the blueberry plants. For lowbush blueberries apply the second application as a broadcast, soil application to the ground.

A crop oil concentrate at a rate of 2 pints per acre may be included in the spray mixture.

Dilution Rate:

Use a minimum of 10 gallons of water per acre by ground application only.

Tank Mixes:

Other registered products may be tank mixed with QuinStar® 4L. Read and follow the applicable Restrictions and Limitations and Directions For Use on products involved in tank mixing. The most restrictive labeling applies to tank mixes.

USE PRECAUTIONS:

- Do not apply to crops subjected to stress conditions such as hail damage, flooding, drought, injury from other herbicides, or widely fluctuating temperatures, as crop injury may result.

USE RESTRICTIONS:

- Maximum annual use rate: Do not apply more than a total of 25.2 fluid ounces of QuinStar® 4L herbicide (0.75 lbs AI) per acre per year.
- Do not make more than 2 applications per year.
- Do not make a second application within 30 days of first application.
- Preharvest Interval: 30 days
- Crop Rotation Restrictions:
- In case of crop failure, do not plant any other crop other than Spring or Winter wheat or grain sorghum for 309 days (10 months) following application. For alfalfa, clover, dry beans, flax, peas, lentils, safflower, Solanaceous family (and other sensitive species listed in PRODUCT INFORMATION section) crops and sugarbeets, do not replant for 24 months and conduct a bioassay prior to planting any of these crops.
- Do not use selective application equipment such as recirculating sprayers, wiper applicators, or shielded applicators.
- Do not apply by ground when wind speed is greater than 10 mph.
- Do not apply by air.
- Do not allow livestock to graze in treated areas.
- Do not apply to irrigation ditches or areas that act as a channel for water entering cropland.

CRANBERRY

(And other Low Growing Berries in Sub-Group 13-07H including Bearberry, bilberry, lowbush blueberry, cloudberry, cranberry, lingonberry, muntries and partridgeberry)

(Do not apply to strawberry, highbush blueberry, or highbush cranberry.)

Weeds Controlled:

Dodder, Yellow loosestrife and other broadleaf and grass weeds.

Dosage and Frequency/Timing of Applications:

Apply up to 8.4 fluid ounces per acre of QuinStar® 4L Herbicide as a foliar application. A second application may be made at least 30 days after the first application. A crop oil concentrate at a rate of 2 pints per acre may be included in the spray mixture.

Dilution Rate:

Use a minimum of 10 gallons of water per acre by ground application only.

Tank Mixes:

Other registered products may be tank mixed with QuinStar® 4L. Read and follow the applicable Restrictions and Limitations and Directions For Use on products involved in tank mixing. The most restrictive labeling applies to tank mixes.

USE PRECAUTIONS:

- Do not apply to crops subjected to stress conditions such as hail damage, flooding, drought, injury from other herbicides, or widely fluctuating temperatures, as crop injury may result.

USE RESTRICTIONS:

- Maximum annual use rate: Do not apply more than a total of 16.8 fluid ounces of QuinStar® 4L herbicide (0.5 lbs AI) per acre per year.
- Do not make more than 2 applications per year.
- Do not make a second application within 30 days of first application.
- Preharvest Interval: 60 days
- Crop Rotation Restrictions:
 - In case of crop failure, do not plant any other crop other than Spring or Winter wheat or grain sorghum for 309 days (10 months) following application. For alfalfa, clover, dry beans, flax, peas, lentils, safflower, Solanaceous family (and other sensitive species listed in PRODUCT INFORMATION section) crops and sugarbeets, do not replant for 24 months and conduct a bioassay prior to planting any of these crops.
- Do not use selective application equipment such as recirculating sprayers, wiper applicators, or shielded applicators.
- Do not apply by ground when wind speed is greater than 10 mph.
- Do not apply by air.
- Do not allow livestock to graze in treated areas.
- Do not apply to irrigation ditches or areas that act as a channel for water entering cropland.
- DO NOT use treated cranberry fields for the aquaculture of edible fish and crustaceans (crayfish).

CANE BERRY

(And other Berries in Sub-Group 13-07A including Blackberry; loganberry; raspberry, black and red; wild raspberry; cultivars, varieties, and/or hybrids of these)

Weeds Controlled:

Field bindweed, hedge bindweed, barnyardgrass, Canada thistle and large crabgrass.

Dosage and Frequency/Timing of Applications:

For the first application apply up to 12.6 fluid ounces per acre (0.375 lb ai/A) of QuinStar® 4L at the end of dormancy, prior to budbreak. Apply as a banded, soil application on each side of the caneberry plants.

A second application may be made up to 30 days prior to harvest. Apply up to 12.6 fluid ounces per acre (0.375 lb ai/A) of QuinStar® 4L as a banded, soil application on each side of the caneberry plants.

A crop oil concentrate at a rate of 2 pints per acre may be included in the spray mixture.

Dilution Rate:

Use a minimum of 10 gallons of water per acre by ground application only.

Tank Mixes:

Other registered products may be tank mixed with QuinStar® 4L. Read and follow the applicable Restrictions and Limitations and Directions For Use on products involved in tank mixing. The most restrictive labeling applies to tank mixes.

USE PRECAUTIONS:

- Do not apply to crops subjected to stress conditions such as hail damage, flooding, drought, injury from other herbicides, or widely fluctuating temperatures, as crop injury may result.

USE RESTRICTIONS:

- Maximum annual use rate: Do not apply more than a total of 25.2 fluid ounces of QuinStar® 4L herbicide (0.75 lbs AI) per acre per year.
- Do not make more than 2 applications per year.
- Do not make a second application within 30 days of first application.
- Preharvest Interval: 30 days
- Crop Rotation Restrictions:
- In case of crop failure, do not plant any other crop other than Spring or Winter wheat or grain sorghum for 309 days (10 months) following application. For alfalfa, clover, dry beans, flax, peas, lentils, safflower, Solanaceous family (and other sensitive species listed in PRODUCT INFORMATION section) crops and sugarbeets, do not replant for 24 months and conduct a bioassay prior to planting any of these crops.
- Do not use selective application equipment such as recirculating sprayers, wiper applicators, or shielded applicators.
- Do not apply by ground when wind speed is greater than 10 mph.
- Do not apply by air.
- Do not allow livestock to graze in treated areas.
- Do not apply to irrigation ditches or areas that act as a channel for water entering cropland.

RHUBARB

Weeds Controlled:

Field bindweed, hedge bindweed and Canada thistle

Application Directions:

Apply up to 12.6 fluid ounces per acre of QuinStar® 4L Herbicide as a foliar application. A second application may be made at least 30 days after the first application. A crop oil concentrate at a rate of 2 pints per acre may be included in the spray mixture.

Dilution Rate:

Use a minimum of 10 gallons of water per acre by ground application only.

Tank Mixes:

Other registered products may be tank mixed with QuinStar® 4L. Read and follow the applicable Restrictions and Limitations and Directions For Use on products involved in tank mixing. The most restrictive labeling applies to tank mixes.

USE PRECAUTIONS:

- Do not apply to crops subjected to stress conditions such as hail damage, flooding, drought, injury from other herbicides, or widely fluctuating temperatures, as crop injury may result.

USE RESTRICTIONS:

- Maximum annual use rate: Do not apply more than a total of 25.2 fluid ounces of QuinStar® 4L® herbicide (0.75 lbs AI) per acre per year.
- Preharvest Interval: 30 days
- Crop Rotation Restrictions: In case of crop failure, do not plant any other crop other than Spring or Winter wheat or grain sorghum for 309 days (10 months) following application. For alfalfa, clover, dry beans, flax, peas, lentils, safflower, Solanaceous family (and other sensitive species listed in PRODUCT INFORMATION section) crops and sugarbeets, do not replant for 24 months and conduct a bioassay prior to planting any of these crops.
- Do not use selective application equipment such as recirculating sprayers, wiper applicators, or shielded applicators.
- Do not apply by ground when wind speed is greater than 10 mph.
- Do not apply through any type of irrigation equipment.
- Do not apply by air.
- Do not allow livestock to graze in treated areas.
- Do not apply to irrigation ditches or areas that act as a channel for water entering cropland.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

PESTICIDE STORAGE: Store in cool, dry and well ventilated area. Do not store containers under wet conditions.

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

CONTAINER HANDLING: Non-refillable containers (1, 2.5, 30 & 55 gallon):

Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

(non-refillable ≤ 5 gallons): Triple rinse as follows:

Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ 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.

Pressure rinse as follows:

Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

(non-refillable > 5 gallons): Triple rinse as follows:

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

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use for disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable container (250 gallon & bulk): Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from the container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing process two more times.

CONDITIONS OF SALE AND WARRANTY

The Directions For Use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with 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 use of the product in a manner inconsistent with its labeling, all of which are beyond the control of ALBAUGH, LLC or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

ALBAUGH, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions For Use, subject to the inherent risks, referred to above.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ALBAUGH, LLC MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO CASE SHALL ALBAUGH, LLC OR THE SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. ALBAUGH, LLC and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing Conditions of Sale and Warranty which may be varied only by agreement in writing signed by a duly authorized representative of Albaugh, LLC