

**SPECIMEN
LABEL**

Agri Star[®]
By Albaugh, LLC

QUINSTAR[®]

Herbicide

For weed control in rice; grass grown for seed; fallow systems, preplant grain sorghum, and preplant wheat (see Crop-Specific Information for geographic limitations); in-crop grain sorghum; noncrop areas; pasture (including pasture grown for hay), rangeland, Conservation Reserve Program Land (CRP), and switchgrass establishment and maintenance.

Manufactured for:

ALBAUGH, LLC

1525 NE 36th Street
Ankeny, Iowa 50021

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

ACTIVE INGREDIENT:

Quinclorac: 3,7-dichloro-8-quinolinecarboxylic acid 75.0%

OTHER INGREDIENTS 25.0%

TOTAL 100.0%

EPA Reg. No. 42750-88

EPA Est. No. 70815-GA-002

**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.

In case of emergency regarding this product, call CHEMTREC 1-800-424-9300.

**See inside booklet for additional PRECAUTIONARY STATEMENTS
and complete DIRECTIONS FOR USE.**

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 dust or spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made out of any waterproof material
- Shoes plus socks

Wash thoroughly with soap and water after handling. 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, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROL 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:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
 - Remove clothing 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.
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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
 - Chemical-resistant gloves Category A, such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber ≥ 14 mils
 - Shoes plus socks
-

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or 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 may be disposed of on site or at an approved waste disposal facility.

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

Triple rinse non-refillable < 50 pounds 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.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank. 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.

PRODUCT INFORMATION

QUINSTAR® is a dispersible granule designed for dilution with water and can be used for weed control in:

- Rice
- Grass grown for seed
- Fallow systems
- Preplant grain sorghum
- Preplant wheat (see **Crop-Specific Information** for geographic limitations)
- In-crop grain sorghum
- Noncrop areas; pasture (including pasture grown for hay), rangeland, and Conservation Reserve Program Land (CRP)
- Switchgrass establishment and maintenance

For optimum control, QUINSTAR® may be combined with one of the tank mix partners listed in **Crop-Specific Information**.

WEEDS CONTROLLED

When used as directed, QUINSTAR® will control or suppress the weed species listed in **Table 1**. For complete information on rates, including restrictions on maximum rates per year, see **Crop-Specific Information**. The following weed species require special instructions for best weed control or suppression.

Field and Hedge Bindweed Control

For best bindweed control, apply QUINSTAR® in the fall just before the first killing frost. Bindweed plants should be actively growing and at least 4 inches long. If tillage is part of local postharvest practice, allow a minimum of 30 days after tillage for bindweed plants to regrow before application. For best long-term bindweed control, make yearly applications of QUINSTAR® at 0.34–0.50 lbs. per acre in the fall. Use the higher specified rate for dense populations or large plants.

Canada Thistle, Perennial Sowthistle, and Russian Thistle

Use 0.50 lbs. of QUINSTAR® per acre for suppression and annual growth control of Canada thistle, perennial sowthistle, and Russian thistle. Apply QUINSTAR® at rosette stage or bud stage. Avoid 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 0.50 lbs. per acre of QUINSTAR® with dicamba herbicide.

Leafy Spurge

Use 0.50–1.0 lbs. of QUINSTAR® per acre in noncrop areas for suppression and annual growth control of leafy spurge. Apply QUINSTAR® 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 0.50 lbs. per acre of QUINSTAR® with dicamba herbicide.

(continued)

Table 1. TARGET WEEDS

WEEDS CONTROLLED			
Common Name	Scientific Name	Common Name	Scientific Name
Annual Grass Weeds¹ (0 to 2 inches)			
Barnyardgrass	<i>Echinochloa crus-galli</i>	Foxtail, yellow	<i>Setaria pumila</i>
Crabgrass, large	<i>Digitaria sanguinalis</i>	Signalgrass, broadleaf	<i>Urochloa platyphylla</i>
Foxtail, giant	<i>Setaria faberi</i>	Junglerice	<i>Echinochloa colona</i>
Foxtail, green	<i>Setaria viridis</i>		
Annual Broadleaf Weeds (0 to 2 inches)			
Bedstraw, catchweed	<i>Galium aparine</i>	Morningglory, ivyleaf	<i>Ipomoea hederacea</i>
Clover	<i>Trifolium</i> spp.	Morningglory, palmleaf	<i>Ipomoea wrightii</i>
Eclipta	<i>Eclipta prostrata</i>	Morningglory, pitted	<i>Ipomoea lacunosa</i>
Flax, volunteer	<i>Linum usitatissimum</i>	Morningglory, purple moonflower	<i>Ipomoea turbinata</i>
Jointvetch, Indian	<i>Aeschynomene indica</i>	Morningglory, tall (common)	<i>Ipomoea purpurea</i>
Jointvetch, Northern	<i>Aeschynomene virginica</i>	Sesbania, hemp	<i>Sesbania exaltata</i>
Lettuce, prickly	<i>Lactuca serriola</i>		
Morningglory, cypressvine	<i>Ipomoea quamoclit</i>		
Morningglory, entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>		
Perennial Broadleaf Weeds			
Bindweed ² , field	<i>Convolvulus arvensis</i>	Bindweed ² , hedge	<i>Calystegia sepium</i>
WEEDS SUPPRESSED			
Annual Broadleaf Weeds (0 to 2 inches)			
Alligatorweed	<i>Alternanthera philoxeroides</i>	Ragweed, giant	<i>Ambrosia trifida</i>
Kochia	<i>Kochia scoparia</i>	Sunflower, wild	<i>Helianthus annuus</i>
Lambsquarters, common	<i>Chenopodium album</i>	Thistle ² , Russian	<i>Salsola tragus</i>
Ragweed, common	<i>Ambrosia artemisiifolia</i>	Velvetleaf	<i>Abutilon theophrasti</i>
Perennial Broadleaf Weeds			
Dandelion	<i>Taraxacum officinale</i>	Spurge ² , leafy	<i>Euphorbia esula</i>
Sowthistle ² , perennial	<i>Sonchus arvensis</i>	Thistle ² , Canada	<i>Cirsium arvense</i>
¹ For best control of annual grass weeds, target application before tillering. ² For specific instructions and limitations on bindweed species, Canada thistle, leafy spurge, perennial sowthistle, and Russian thistle, refer to the weed-specific information preceding this table.			

Mode of Action

QUINSTAR® herbicide is a systemic herbicide with plant uptake through both foliage and roots. Herbicide symptoms on susceptible plants include twisting, stunting, reddening, and chlorosis.

- **Annual weeds** – Symptoms may take up to two weeks after application to develop with death occurring in about three weeks.
- **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

QUINSTAR® has a low probability of selecting for resistant weed biotypes. However, repeated applications of a single mode of action in a weed management plan increase the probability of herbicide resistance developing in a population. Therefore, weed management programs should include rotations using herbicides with different modes of action.

APPLICATION INSTRUCTIONS

QUINSTAR® should be applied by ground equipment whenever possible. QUINSTAR® may also be applied using aerial equipment in certain states (see **Table 2A** and **Table 2B**). When applying by air, read and follow all drift management guidelines in this labeling.

QUINSTAR® may be applied as either a broadcast or spot spray application. For spot spray applications, DO NOT exceed the maximum per area application rates in this labeling for broadcast applications. Apply to actively growing weeds only.

For best control of most broadleaf weeds, apply QUINSTAR® when weeds are small. Delaying application permits weeds to exceed the maximum specified or labeled size and may lead to poor control.

In irrigated areas, irrigate before treatment to ensure active weed growth.

For best postemergence control, cover weeds thoroughly with spray solution for optimal foliar uptake of QUINSTAR®. Large leaf canopies can shelter smaller weeds which can prevent adequate spray coverage.

GROUND APPLICATION

Water Volume

Use 5 to 40 gallons of water per broadcast acre. When weed foliage is dense, higher spray volumes may be required.

Spray 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. Ensure sprayer rate controller hardware (if so equipped) does not allow pressure increase above the desired range.

Ground Application Equipment

- Use only nozzles spaced up to 20 inches apart that produce uniform spray patterns and thorough coverage. Select nozzles designed to produce larger spray droplets for reduced spray drift.
- DO NOT use controlled droplet applicator (CDA) nozzles.
- DO NOT use selective application equipment such as recirculating sprayers, wiper applicators, or shielded applicators.

AERIAL APPLICATION

When application with ground spray equipment is not possible, application by aircraft is acceptable if the aerial applicator understands the risks and assumes the liability associated with accidental spray drift from aerial application.

Water Volume

Apply a minimum of 5 gallons water per broadcast acre.

DO NOT make aerial application when:

- Prohibited by state regulations.
- Wind speed is more than 8 mph.
- Air temperature is more than 90°F.
- Environmental conditions exist for temperature inversions.

QUINSTAR® may be applied by air in states listed in **Table 2A** subject to geographic prohibitions listed in **Table 2B**.

(continued)

Table 2A. QUINSTAR® Aerial Application Permitted

Arkansas ¹	Louisiana	Nevada	South Dakota ¹
Colorado ¹	Minnesota	New Mexico ¹	Texas ¹
Idaho ¹	Mississippi	North Dakota ¹	Utah ¹
Illinois	Missouri	Oklahoma ¹	Washington ¹
Iowa	Montana ¹	Oregon ¹	Wyoming
Kansas ¹	Nebraska ¹		

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. Geographic Prohibitions on Aerial Application

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. See also, Arkansas Restrictions section for areas where QUINSTAR® herbicide 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
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 QUINSTAR® in Arkansas.

Arkansas Restrictions:

DO NOT apply QUINSTAR® (quinclorac) 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.

Cleaning Spray Equipment

Clean spray equipment thoroughly using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions before and after applying this product.

SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-related and weather-related factors determines 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 drift movement from aerial applications to agricultural field crops.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the airstream and never be pointed downward 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 advisory information presented below.

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 spray is released parallel to the airstream produces larger droplets than other orientations and is recommended practice. Significant deflection from the 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 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications must 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 upwind 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 droplets, etc.).

Wind

Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. DO NOT apply at wind speeds below 2 mph because of variable wind direction and high inversion potential.

NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

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

Temperature Inversions

Applications must 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 because of 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 must 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, or nontarget crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

ADDITIVES

Postemergence Applications Only – Add 2 pints of crop oil concentrate (COC) or 1 to 2 pints of methylated seed oil (MSO) per acre for better leaf and stem uptake of the herbicide and enhanced weed control. A nitrogen fertilizer source [ammonium sulfate (AMS), urea ammonium nitrate (UAN)] can be added for better efficacy.

An 80% active nonionic spray surfactant (NIS; 1 quart per 100 gallons of water) and a nitrogen fertilizer source (AMS at 8.5 pounds per 100 gallons water) may be used when QUINSTAR® herbicide is tank mixed with products that restrict the use of oil additives. This may result in reduced weed control with QUINSTAR®.

Due to the dry conditions, MSO plus AMS (8.5 pounds per 100 gallons of water) must be used when QUINSTAR® is applied alone for bindweed control in New Mexico, Oklahoma, and Texas. Use of QUINSTAR® without additives in these areas will lead to incomplete control.

Spray deposition aids (drift control additives) may be added to the spray solution to affect spray droplet size and other characteristics and reduce the potential for off-target, accidental spray drift.

When an adjuvant is to be used with this product, the use of a Chemical Producers and Distributors Association (CPDA) certified adjuvant is recommended.

TANK MIXING INFORMATION

QUINSTAR® may be tank mixed with other registered products. 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.

Refer to **Crop-Specific Information** section for tank mix products for use in rice and in-crop grain sorghum.

ALBAUGH, LLC does not recommend using tank mixes other than those listed on ALBAUGH, LLC labeling. Physical incompatibility, reduced weed control, or crop injury may result from mixing QUINSTAR® with other pesticides, additives, or fertilizers. Local agricultural authorities may be a source of information when using other than ALBAUGH, LLC-recommended tank mixes. Consult with your local ALBAUGH, LLC dealer regarding local tank mix options.

Compatibility Test for Mix Components

Before mixing components, always perform a compatibility jar test.

1. For 20 gallons per acre spray volume, use 3.3 cups (800 mL) of water. For other spray volumes, adjust rates accordingly. Only use water from the intended source at the source temperature.
2. Add components in the sequence indicated in Mixing Order using 2 teaspoons for each pound or 1 teaspoon for each pint of label rate per acre.
3. Always cap the jar and invert 10 cycles between component additions.
4. When the components have all been added to the jar, let the solution stand for 15 minutes.
5. Evaluate the solution 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.

Mixing Order

Maintain constant agitation throughout mixing and application.

1. Water – Fill clean tank 3/4 full with clean water and start agitation.
2. Inductor – If an inductor is used, rinse it thoroughly after each component has been added.
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 (dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
5. Water-soluble products (including QUINSTAR® herbicide)
6. Emulsifiable concentrates (such as oil concentrate when applicable)
7. Water-soluble additives (such as AMS or UAN when applicable)
8. Remaining quantity of water

Maintain constant agitation during application.

RESTRICTIONS AND LIMITATIONS

Maximum Use Rates

- DO NOT apply more than 0.67 lbs. of QUINSTAR® per acre per season in rice.
- DO NOT apply more than a total of 1.0 lbs. of QUINSTAR® per acre per calendar year to all other use sites except rice.
- Restricted-Entry Interval (REI) – 12 hours
- DO NOT apply QUINSTAR® by air in any state not listed in **Table 2A**. See **Table 2B** for additional restrictions.
- DO NOT apply QUINSTAR® when air temperature is more than 90°F.
- Wind Speed
 - Ground application: DO NOT apply QUINSTAR® when wind speed is more than 10 mph.
 - Aerial application: DO NOT apply QUINSTAR® when wind speed is more than 8 mph.
- DO NOT apply through any type of irrigation equipment.
- DO NOT apply to weeds or grass under stress because of lack of moisture, herbicide injury, mechanical injury, or cold temperatures, or 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, or crop injury may result.

Rainfast Period

QUINSTAR® is rainfast 6 hours after application.

Spray Drift to Sensitive Crops

DO NOT allow QUINSTAR® to drift outside the intended target areas onto other desirable plants, especially sensitive crops belonging to the following plant families, or severe injury will occur.

1. Solanaceae – tomato, potato, tobacco, eggplant, peppers (Capsicum), among others
 2. Umbelliferae – celery, parsley, carrot, 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, sunflower, among others
 9. Linaceae – flax
- DO NOT allow spray containing QUINSTAR® to drift onto areas where tomatoes are to be planted, have been planted, or onto emerged/transplanted tomatoes, or severe injury will occur.
 - DO NOT use QUINSTAR® in tank mixes not specified on this label.
 - DO NOT premix QUINSTAR® with fungicides, herbicides, insecticides, additives, or fertilizers or contamination of mixing equipment and movement of QUINSTAR® to off-site mixing areas can occur.

CROP ROTATION INTERVALS

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 may be planted 6 months after a QUINSTAR® herbicide application in the following states: Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

For 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.

QUINSTAR® cannot be used to formulate or reformulate any other pesticide product.

CROP-SPECIFIC INFORMATION

RICE

Whenever possible, apply spray mixtures with ground spray equipment.

QUINSTAR® can be used for weed control in dry-seeded, water-seeded, and Clearfield® rice planting and production cultures. QUINSTAR® may be applied to rice fields to control barnyardgrass (including propanil-resistant bio-types), other annual grass weeds and certain broadleaf weeds.

Crop Tolerance

Rice is tolerant to QUINSTAR® 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® is the most sensitive. These symptoms are typically short-lived, and rice usually recovers without significant stand loss or other injury.

Application Rates and Timing

Irrigation and Flood Water

Best weed control with QUINSTAR® depends on timely irrigation, including flush irrigation, to maintain moist soil conditions and establishment of permanent flood water. Keep soil moist to maintain weed control. If soil is permitted to dry and weeds emerge, flush irrigate the field to reactivate residual activity of the herbicide while weeds are small (1 inch or less). If needed, make additional QUINSTAR® applications, but DO NOT apply more than 0.67 lbs. per acre per season.

In water-seeded rice plantings and in pinpoint flood culture, drain all water from the rice field and ensure seedling rice has at least 2 leaves before applying QUINSTAR®. Rice seedlings without 2 leaves may be injured. Form flood water levees before applying QUINSTAR® 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®, drain excess water from the rice field to avoid possible rice injury.

Soil Application

QUINSTAR® can be applied to the soil surface before, during, or after planting dry-seeded rice. Soil texture and clay content determine the use rate for weed control. For best control in high clay content (heavy-texture) soil, use higher specified rates. Refer to **Table 3** for use rates based on soil texture.

Foliar Application

QUINSTAR® can be applied to foliage of susceptible grass and broadleaf weeds in dry-seeded and water-seeded rice. When applied to weed foliage, leaves and stems partially uptake the herbicide. Rice must be flushed after foliar application to maximize root absorption for commercially acceptable weed control. Additionally, herbicide reaching the soil surface moves into the soil with rainfall or irrigation, which provides residual weed control.

Weeds are effectively controlled with QUINSTAR® application rates of 0.40–0.50 lbs. per acre.

Refer to **Table 3** for application rates based on weed size or growth stage.

Table 3. Weeds Controlled, Application Rates, and Application Timing

ANNUAL WEEDS CONTROLLED		Soil Application (lbs./A)			Foliar Application (lbs./A)	
Common Name	Scientific Name	Coarse Soil ¹	Medium Soil ²	Fine Soil ³	Small Weeds Controlled and Short-term Soil Residual	Large Weeds Controlled and Long-term Soil Residual
GRASS WEEDS						
Barnyardgrass	<i>Echinochloa crus-galli</i>	0.34–0.44	0.50	0.67	0.40–0.50 up to 2 inches	0.40–0.67 2 to 3 inches
Crabgrass, large	<i>Digitaria sanguinalis</i>					
Junglerice	<i>Echinochloa colona</i>					
Signalgrass, broadleaf	<i>Urochloa platyphylla</i>					
BROADLEAF WEEDS						
Eclipta	<i>Eclipta prostrata</i>	0.34–0.44	0.50	0.67	0.40–0.50 up to 2 leaves	0.50–0.67 up to 3 leaves
Jointvetch, Indian	<i>Aeschynomene indica</i>					
Jointvetch, Northern	<i>Aeschynomene virginica</i>					
Morningglory, cypressvine	<i>Ipomoea quamoclit</i>					
Morningglory, entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>					
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>					
Morningglory, palmleaf	<i>Ipomoea wrightii</i>					
Morningglory, pitted	<i>Ipomoea lacunosa</i>					
Morningglory, purple Moonflower	<i>Ipomoea turbinate</i>					
Morningglory, tall	<i>Ipomoea purpurea</i> (common)					
Sesbania, hemp	<i>Sesbania exaltata</i>					
Alligatorweed*	<i>Alternanthera philoxeroides</i>	n/a	n/a	n/a	0.67	n/a

¹Sandy loam

²Silt, loam, silt loam, sandy clay loam

³Silty clay, silty clay loam, clay loam, clay, gumbo, and buckshot

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

RICE TANK MIXES

QUINSTAR® herbicide controls many annual grass and broadleaf weeds. For more effective weed control or additional weeds controlled, tank mix QUINSTAR® with other herbicides labeled for weed control in rice.

See **Table 4** for tank mix information. Read and follow all use directions, precautions, and restrictions for each herbicide in the spray mixture. The most restrictive labeling applies to tank mixes.

Table 4. Tank Mixes with QUINSTAR® Application Rate of 0.34–0.67 lbs. per Acre

COMMON NAME	SCIENTIFIC NAME	TANK MIX PRODUCT (Rate/Acre)
Cocklebur	<i>Xanthium strumarium</i>	Basagran® herbicide 1.5 to 2.0 pints
Dayflower spp.	<i>Commelina</i> spp.	Basagran 1.5 to 2.0 pints
Morningglory, cypressvine	<i>Ipomoea quamoclit</i>	Command® 3ME herbicide 0.8 to 1.6 pints
Morningglory, entireleaf	<i>Ipomoea hederacea</i> var. <i>integriuscula</i>	
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	
Morningglory, palmleaf	<i>Ipomoea wrightii</i>	
Morningglory, pitted	<i>Ipomoea lacunosa</i>	
Morningglory, purple moonflower	<i>Ipomoea turbinata</i>	
Morningglory, tall (common)	<i>Ipomoea purpurea</i>	
Nutsedge, yellow	<i>Cyperus esculentus</i>	Basagran 1.5 to 2.0 pints
Red rice	<i>Oryza rufipogon</i>	Newpath® herbicide ¹ 4 to 6 fl. ozs.
Sesbania, hemp	<i>Sesbania exaltata</i>	Ultra Blazer® herbicide ² 0.5 to 1.0 pint or Command 3ME 0.8 to 1.6 pints
Sprangletop	<i>Leptochloa</i> spp.	Prowl® H20 herbicide ³ 1.5 to 2.0 pints or Bolero® 8 EC herbicide ⁴ 0.5 to 1.0 pint or Command 3ME 0.8 to 1.6 pints

¹ Apply tank mix only on Clearfield® rice varieties and hybrids.
² Apply tank mix after rice has reached the 3-leaf stage.
³ Apply tank mix to soil surface after planting, before rice emergence, and before sprangletop emergence.
⁴ Apply tank mix to soil surface 1 to 5 days before rice emergence.

In addition to tank mix products described in **Table 4**, the following products may also be tank mixed with QUINSTAR® for use in Rice:

- Beyond Herbicide (Clearfield rice only)
- Ricestar HT Herbicide

RICE-SPECIFIC RESTRICTIONS AND LIMITATIONS

- MAXIMUM USE RATES
 - 0.67 lbs. per acre per application
 - 0.67 lbs. per acre per year (season)
- PREHARVEST INTERVAL (PHI)
 - DO NOT apply QUINSTAR® herbicide within 40 days before rice harvest.
- DO NOT apply QUINSTAR® to rice that is heading.
- DO NOT use rice straw or processing by-products (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 aquaculture of edible fish and crustaceans (crayfish).
- After QUINSTAR® application, DO NOT use water from rice cultivation to irrigate any crop other than rice.
- SOIL RESTRICTIONS
 - DO NOT use QUINSTAR® on precision-cut fields until the second rice crop or injury can occur.
 - DO NOT use QUINSTAR® on sand and loamy sand soils.
 - DO NOT apply QUINSTAR® to rice fields with a history of poor water-holding capacity (porous subsoil) or erratic weed control may result.
 - DO NOT apply QUINSTAR® on rice-growing soil that does not have an impermeable hard pan to provide good water-holding capacity.

GRASS GROWN FOR SEED

Application Rates

Apply QUINSTAR® at 0.34–0.50 lbs. per acre for control of annual grass and broadleaf weeds (see **Weeds Controlled** section).

Application Timing

Apply QUINSTAR® after grass seed harvest and hay removal but before the first killing frost. Refer to **Weeds Controlled** section for use directions.

Crop-Specific Restrictions and Limitations

QUINSTAR® may be used in cool-season and warm-season grass grown for seed listed in **Table 5**.

Table 5. QUINSTAR®-Tolerant Grass Varieties Grown for Seed

COOL-SEASON GRASS	
Bromegrass, meadow	Wheatgrass, crested
Bromegrass, smooth	Wheatgrass, fairway
Bromegrass, smooth x meadow cross	Wheatgrass, fairway x crested cross
European dunegrass	Wheatgrass, intermediate
Fescue, fine	Wheatgrass, pubescent
Fescue, tall	Wheatgrass, Siberian
Junegrass	Wheatgrass, slender
Kentucky bluegrass	Wheatgrass, tall
Needlegrass, green	Wheatgrass, thickspike
Orchardgrass	Wheatgrass, Western
Quackgrass	Wildrye, Altai
Ryegrass, annual	Wildrye, basin
Ryegrass, Indian	Wildrye, beardless
Ryegrass, perennial	Wildrye, Dahurian
Wheatgrass, bluebunch	Wildrye, mammoth
Wheatgrass, bluebunch x quack cross	Wildrye, Russian
WARM-SEASON GRASS	
Bermudagrass	Grama, blue
Bluestern, big	Grama, side-oats
Bluestem, little	Sandreed, prairie
Bluestem, sand	Switchgrass

FALLOW SYSTEMS, PREPLANT GRAIN SORGHUM, AND PREPLANT WHEAT

Application Rates and Timing

QUINSTAR® herbicide can be applied in fallow areas, preplant grain sorghum, and preplant wheat (unless otherwise noted) at 0.34 lbs. per acre for control of annual grass and broadleaf weeds (see **Table 1**). For bindweed control with QUINSTAR®, refer to **Weed-Specific Information** in **Weeds Controlled** section.

Timing-Specific Instructions

When QUINSTAR® is applied as a preplant treatment in wheat, plant wheat at least 1 inch deep. Shallow planting (less than 1 inch deep) may result in possible crop injury when wheat is subjected to drought or other stress conditions.

See **Table 6** for tank mix use rates with QUINSTAR® in fallow systems, preplant grain sorghum, and preplant wheat.

FALLOW SYSTEMS, PREPLANT GRAIN SORGHUM, AND PREPLANT WHEAT-SPECIFIC RESTRICTIONS AND LIMITATIONS Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming

- Wheat may be planted 6 months after a QUINSTAR® application.

Table 6. Tank Mix Use Rates/Acre with QUINSTAR® in Fallow Systems, Preplant Grain Sorghum, Preplant Wheat and in Crop Grain Sorghum

Herbicide Tank Mix Partner	Fallow Systems and Preplant Wheat	Grain Sorghum	
		Preplant	Post-emergence
2,4-D	0.375 to 1.0 lb. ai		0.125 to 0.5 lb. ai
Atrazine	-	0.5 to 1.0 lb. ai	
Clarity® herbicide	4 to 16 fl. ozs.		8 fl. ozs.
Peak® herbicide	-	-	0.25 oz.
Glyphosate	12 to 32 fl. ozs.		
Buctril® herbicide	-	-	16 fl. ozs.
Buctril + Atrazine	-	-	32 fl. ozs.
Guardsman Max® herbicide	-	-	40 to 64 fl. ozs.

IN-CROP GRAIN SORGHUM

Application Rates and Timing

Apply QUINSTAR® to grain sorghum at 0.34–0.50 lbs. per acre from pre-emergence to post-emergence (plants up to 12 inches tall) for control of annual grass and broadleaf weeds (see **Table 1**).

For best annual grass control, apply QUINSTAR® at 0.34 - 0.50 lbs. per acre in a tank mix with atrazine at 0.5 to 1.0 pound ai per acre when weeds are less than 2 inches tall.

DO NOT use liquid fertilizer as a carrier for postemergence application of QUINSTAR® to grain sorghum.

See **Table 6** for tank mix use rates with QUINSTAR® in post-emergence grain sorghum.

NONCROP AREAS (Fencelines, Roadsides, and Rights-of-way)

Application Rates and Timing

QUINSTAR® may be applied to non-crop areas (fencelines, roadsides, highway medians, utilities, and railroad and pipeline rights-of-way) for control of certain weeds in the Noxious Weed Control Programs, Districts, or Areas including broadcast or spot treatments.

Apply 0.34–0.50 lbs. of QUINSTAR® per acre for control of annual weeds, or 0.50–1.00 lbs. per acre for other perennial weeds (see **Table 1**). For bindweed control with QUINSTAR®, refer to weed-specific information in **Weeds Controlled** section.

DO NOT apply more than a total of 1.0 lbs. of QUINSTAR® per acre per calendar year.

QUINSTAR® may be tank mixed with other herbicides labeled for use in non-crop areas unless prohibited on the respective product label. The most restrictive labeling applies to tank mixes.

**PASTURES (including pasture grown for hay), RANGELAND,
CONSERVATION RESERVE PROGRAM LAND (CRP), and
SWITCHGRASS ESTABLISHMENT AND MAINTENANCE**

QUINSTAR® herbicide may be used in cool-season and warm-season pasture and rangeland grass listed in **Table 8**.

Application Rates and Timing

QUINSTAR® may be used in established pasture, rangeland, Conservation Reserve Program Land (CRP), and switch-grass establishment and maintenance as a postemergence product with residual control.

QUINSTAR® may be applied at 0.18–1.0 lbs. per acre to control grass and broadleaf weeds, including field bindweed and leafy spurge (refer to weed-specific information in **Weeds Controlled** section and **Table 7**).

Table 7. Application Rates

Pasture (including pasture grown for hay), Rangeland, Conservation Reserve Program Land (CRP), and Switchgrass Establishment and Maintenance	
Target Weeds	Rate/Acre (lbs. product)
Grass and broadleaf control	0.34–1.0
Bindweed control*	0.34–1.0
Bindweed maintenance*	0.18
Leafy spurge control	0.50**–1.0
*See weed-specific information in Weeds Controlled section.	
**Suppression only; must be tank mixed with dicamba for effective control.	

Pasture and Rangeland Tank Mixes

QUINSTAR® 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.

PASTURE, RANGELAND, CONSERVATION RESERVE PROGRAM LAND (CRP), AND SWITCHGRASS-SPECIFIC RESTRICTIONS AND LIMITATIONS

- DO NOT cut treated area for hay within 7 days after treatment; however, there is no waiting-period restriction on grazing forage following application of QUINSTAR® at labeled rates.
- DO NOT apply to water or areas where surface water is present.
- DO NOT apply to irrigation ditches or areas that act as a channel for water entering cropland.

Table 8. QUINSTAR®-Tolerant Pasture and Rangeland Grass

COOL-SEASON GRASS		
Bromegrass, meadow	Ryegrass, annual	Wheatgrass, slender
Bromegrass, smooth	Ryegrass, Indian	Wheatgrass, tall
Bromegrass, smooth x meadow cross	Ryegrass, perennial	Wheatgrass, thickspike
European dunegrass	Wheatgrass, bluebunch	Wheatgrass, Western
Fescue, fine*	Wheatgrass, bluebunch x quack cross	Wildrye, Altai
Fescue, tall	Wheatgrass, crested	Wildrye, basin
Junegrass	Wheatgrass, fairway	Wildrye, beardless
Kentucky bluegrass	Wheatgrass, fairway x crested cross	Wildrye, Dahurian
Needle-and-thread	Wheatgrass, intermediate	Wildrye, mammoth
Needlegrass, green	Wheatgrass, pubescent	Wildrye, Russian
Orchardgrass	Wheatgrass, Siberian	
WARM-SEASON GRASS		
Bermudagrass**	Buffalograss	Lovegrass
Bluestem, big	Gramma, blue	Sandreed, prairie
Bluestem, little	Gramma, side-oats	Switchgrass
Bluestem, sand	Indiangrass	
*Apply QUINSTAR® only to fine fescue blends.		
**QUINSTAR® application to Bermudagrass may result in temporary yellowing (chlorosis) under certain conditions.		

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. All such risks shall be assumed by the Buyer.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, 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.

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