

# OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

WASHINGTON, D.C. 20460

October 30, 2024

# **SENT BY EMAIL**

Niamh McMahon carolb@amvac.com AMVAC CHEMICAL CORPORATION

Subject: Labeling Notification per Pesticide Registration Notice (PRN) 98-10 - Add pesticide category

"Herbicide"

Product Name: Arroz 80 Admin Number: 5481-649 EPA Receipt Date: 04/13/2022 Action Case Number: 00480279

# Dear Niamh McMahon:

The U.S. Environmental Protection Agency is in receipt of your application for notification under Pesticide Registration Notice 98-10 for the above referenced product. The EPA has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The labeling submitted with this application has been stamped "Notification" and will be placed in our records.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide, Fungicide, and Rodenticide Act and is subject to review by the EPA. If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains statements or claims substantially differing from statements or claims made in connection with obtaining a FIFRA section 3 registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

If you have questions, please contact Bewanda Alexander via email at alexander.bewanda@epa.gov.

Sincerely,

Kable Bo Davis

Kable Bo Davis, Senior Advisor FHB, RD Office of Pesticide Programs

# Arroz 80

# Herbicide

ACTIVE INGREDIENT:	By Wt
*Bispyribac-sodium	80.0%
OTHER INGREDIENTS:	20.0%
TOTAL:	100.0%

# **KEEP OUT OF REACH OF CHILDREN**

# **CAUTION**

	FIRST AID
If swallowed	Call a poison control center or doctor immediately for treatment advice.
	Have person sip a glass of water if able to swallow.
	Do not induce vomiting unless told to by the poison control center or doctor.
	Do not give anything to an unconscious person.
If in eyes	Hold eye open and rinse slowly and gently with water for 15-20 minutes.
	Remove contact lenses, if present, after the first 5 minutes, then continue rinsing
	eye.
	Call a poison control center or doctor for treatment advice.
If on skin or clothing	Take off contaminated clothing.
	Rinse skin immediately with plenty of water for 15-20 minutes.
	Call a poison control center or doctor for treatment advice.
If inhaled	Move person to fresh air.
	If person is not breathing, call 911 or an ambulance, then give artificial respiration,
preferably mouth-to-mouth, if possible.	
	Call a poison control center or doctor for further treatment advice.
	EMERGENCY INFORMATION
Have the product con	ntainer or label with you when calling a poison control center or doctor, or going for
treatment.	
FOR THE FOLLOWING E	MERGENCIES, PHONE 24 HOURS A DAY:
For Medical Emergenci	ies phone:1-888-681-4261
For Transportation Em	ergencies, including spill, leak or fire, phone: CHEMTREC®1-800-424-9300
	nation phone: AMVAC®1-888-462-6822

See booklet for additional Precautionary Statements and Directions for Use.

EPA Reg. No. 5481-649
Net Contents:

EPA Est. No.	<b>FPA</b>	Est.	No.		
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5481-649

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

10/30/2024

AMERICAN

[Manufactured for:] **AMVAC Chemical Corporation** 4695 MacArthur Court, Suite 1200 Newport Beach, CA 92660 U.S.A.

<sup>\*</sup>Sodium 2,6-bis[(4,6-dimethoxypyrimidin-2-yl)oxy]benzoate

# PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Causes moderate eye irritation. Harmful if swallowed or absorbed through the skin. Avoid contact with eyes, skin, or clothing. Avoid breathing dust or spray mist.

# PERSONAL PROTECTIVE EQUIPMENT (PPE)

# Applicators and other handlers must wear:

- Long-sleeved shirt and long pants,
- Chemical-resistant gloves such as Barrier Laminate or Butyl Rubber ≥ 14 mils or Nitrile Rubber ≥ 14 mils or Viton® Rubber ≥ 14 mils,
- Shoes plus socks

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

# **USER SAFETY RECOMMENDATIONS**

#### Users should:

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

# PHYSICAL OR CHEMICAL HAZARDS

Do not mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

# **ENGINEERING CONTROLS STATEMENT:**

Water soluble packets, when used correctly, qualify as a closed mixing/loading system under the Worker Protection Standard [40 CFR 170.607(d)]. Mixers and loaders handling this product while it is enclosed in intact water soluble packets may elect to wear reduced PPE of long-sleeved shirt, long pants, shoes, socks.

When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

#### **ENVIRONMENTAL HAZARDS**

This product is toxic to non-target plants. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters.

### **SURFACE WATER ADVISORY STATEMENT:**

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of bispyribac-sodium from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

# **GROUNDWATER ADVISORY STATEMENT:**

This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

#### NON-TARGET ORGANISM ADVISORY STATEMENT:

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

# **DIRECTIONS FOR USE**

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

# READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

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

# **AGRICULTURAL USE REQUIREMENTS**

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

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

- Coveralls
- Chemical-resistant gloves, such as Barrier Laminate or Butyl Rubber ≥ 14 mils or Nitrile Rubber ≥ mils and
- Shoes plus socks

#### PRODUCT INFORMATION

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

Arroz 80 provides control of listed weeds that infest rice. It behaves selectively, by postemergent contact to the emerged weeds. Arroz 80 is a Group 2 herbicide which works by inhibiting the ALS (acetolactate synthase) enzyme in the weeds. Vulnerable weeds will stop growing and take on a yellow color within 3 to 7 days after application; will exhibit browning within 7 to 14 days after application; will experience death of stem and weeds 14 to 21 days after application (complete control after application of Arroz 80 will occur in 14 to 21 days). Arroz 80 is a contact herbicide, and does not have any soil activity, therefore make certain that weeds are adequately covered with Arroz 80 for desired results. Eight hours after treatment Arroz 80 is considered rainfast. Arroz 80 has a broad application period, and can be a key component in a weed management system, when employed alongside an effective resistance management strategy. After application of this product, some temporary injury to rice may be observed. This will not affect yields. Any injury to rice can be mitigated by top dressing with fertilizer (which will hasten injury recovery). Arroz 80 will not provide any residual control or prevent reinfestation of weeds that germinate after treatment.

#### RESISTANCE MANAGEMENT

Bispyribac sodium, the active ingredient in Arroz 80 is a Group 2 herbicide (ALS inhibitor). Plants with resistance to Group 2 herbicides can occur in any weed population and may not be effectively managed with Group 2 herbicides. Resistant biotypes may dominate the weed population in time if herbicides with the same mode of action or class of chemistry are continually applied over consecutive years, resulting in an increasing or complete loss of weed control over time. Suitable resistance management approaches must be employed to delay herbicide resistance. Take one or more of the following steps:

- Use another herbicide from a different class of herbicide in consecutive years that controls the same weeds in a field.
- Use known effective mechanical or cultural practices (crop rotation, cultivation, etc.), as well as agronomic practices that improve crop performance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses
  historical information related to herbicide use and crop rotation, and that considers tillage ( or other
  mechanical control methods), cultural ( e.g., higher crop seeding rates; precision fertilizer application
  method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties)
  and other management practices.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- After applying herbicides, scout fields to determine the effectiveness of herbicides and other weed control cultural or mechanical practices, paying particular attention to identify weed profile shift or resistance. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.
- For further information or to report any suspected resistance to your AMVAC representative or at 1-888-462-6822.
- Use full listed application rate, and follow label instructions for application timing (particularly for effectiveness against resistant weed species).
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.

Any herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides. Other factors, such as enhanced weed metabolism, may also occur and contribute to weed resistance. Consult your state cooperative extension service, professional consultants, or other qualified authorities for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

#### SPRAY DRIFT MANAGEMENT

# SPRAY DRIFT AERIAL APPLICATIONS

- Do not release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Applicators must use ½ swath displacement upwind of the downwind edge of the field.
- Do not apply when wind speeds exceed 15 mph at the application site. If the wind speed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed wing aircraft and 90% or less of the rotor diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the field.
- Do not apply during temperature inversions.

# SPRAY DRIFT GROUND BOOM APPLICATIONS

- Users must only apply with the release height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy unless making a turf, pasture, or rangeland application, in which case applicators may apply with a nozzle height no more than 4 feet above the ground.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

# SPRAY DRIFT BOOM-LESS GROUND APPLICATIONS

- Applicators are required to use a medium or coarser droplet size (ASABE S572.1) for all applications.
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

# **SPRAY DRIFT ADVISORIES**

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON TARGET SITES AND ENVIRONMENTAL CONDITIONS.

- 1. Where states have more stringent regulations, they must be observed.
- 2. Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.
- 3. When making tank mixture application follow the most restrictive label directions, including application buffer zones, of each product in the mixture.

#### IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

# **Controlling Droplet Size - Ground Boom**

**Volume** – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.

**Pressure** – Use the lowest spray pressures recommended for the nozzle to produce the target spray volume and droplet size.

**Spray Nozzle** – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

# **Controlling Droplet Size - Aircraft**

Adjust nozzles - Follow nozzle manufacturers' recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

# **Boom Height - Ground Boom**

For ground equipment, the boom should remain level with the crop and have minimal bounce.

### Release Height - Aircraft

Higher release heights increase the potential for spray drift.

**Boom-less Ground Applications:** setting nozzles at the lowest effective height will help reduce the potential for spray drift.

**Handheld Technology Applications:** take precautions to minimize spray drift.

# **Shielded Sprayers**

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

#### Wind

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

# **Temperature and Humidity**

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

# **Temperature Inversions**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or 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. Avoid applications during temperature inversions.

# **Sensitive Areas**

Apply this pesticide only 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).

#### APPLICATION INSTRUCTIONS

For optimum efficacy apply the spray solution in a manner that promotes maximum coverage, i.e. proper water volume, correct spray nozzles, optimum weed size, etc. Arroz 80 can be applied:

- By aircraft, with a total spray volume of 10 gallons or greater per acre
- By ground equipment with a total spray volume of 15 to 20 gallons or greater per acre

If spray volume is not sufficient, weed control can be compromised. If foliage canopy is heavy, use enough spray volume to reach and adequately cover weeds. Any factor that unfavorably affects weed coverage can result in compromised weed control. Buffer the application water if the pH is above 7.0 or below 6.0. Do not use turbid, high sediment or ditch water.

# INSTRUCTIONS FOR USING WATER SOLUBLE PACKAGES DIRECTLY INTO SPRAY TANKS:

Water Soluble Packages (WSPs) are designed to dissolve in water. Agitation may be used, if necessary, to help dissolve the WSP. Failure to follow handling and mixing instructions can increase your exposure to the pesticide products in WSPs. WSPs, when used properly, qualify as a closed mixing/loading system under the Agricultural Worker Protection Standard [40 CFR 170.607(d)].

# HANDLING INSTRUCTIONS

Follow these steps when handling pesticide products in WSPs:

- 1) Mix in spray tank only.
- 2) Handle WSP(s) in a manner that protects package from breakage and/or unintended release of contents. If package is broken, put on PPE required for clean-up and then continue with mixing instructions.
- 3) Keep the WSP(s) in outer packaging until just before use.
- 4) Keep the WSP dry prior to adding to the spray tank.
- 5) Handle with dry gloves and according to the label instructions for PPE.
- 6) Keep WSP intact. Do not cut or puncture WSP.
- 7) Reseal the WSP outer package to protect any unused WSP(s)

# **MIXING INSTRUCTIONS**

Follow the steps below when mixing this product, including if tank mixed with other pesticide products. If being tank mixed, the mixing directions 1 through 9 below take precedence over the mixing directions of the other tank mix products. WSPs may, in some cases, be mixed with other pesticide products so long as the directions for use of all mixed products do not conflict. Do not tank mix this product with products that prohibit tank mixing or have conflicting mixing directions.

- 1) If a basket or strainer is present in the tank hatch, remove prior to adding the WSP to the tank.
- 2) Fill tank with water to approximately one-third to one-half of the desired final volume of spray.
- 3) Stop adding water and stop any agitation.
- 4) Place intact/unopened WSP(s) into the tank.
- 5) Do not spray water from a hose or fill pipe to break or dissolve the WSP(s).
- 6) Start mechanical and recirculation agitation from the bottom of tank without using any overhead recirculation, if possible. If overhead recirculation cannot be turned off, close the hatch before starting agitation.
- 7) Dissolving the WSP(s) may take up to 5 minutes or longer, depending on water temperature, water hardness and intensity of agitation.
- 8) Stop agitation before tank lid is opened.
- 9) Open the lid to the tank, exercising caution to avoid contact with dusts or spray mix, to verify that the WSP's have fully dissolved and the contents have been thoroughly mixed into the solution.

- 10) Do not add other allowed products or complete filling the tank until the bags have fully dissolved and pesticide is thoroughly mixed.
- 11) Once the WSP have fully dissolved and any other products have been added to the tank, resume filling the tank with water to the desired level, close the tank lid, and resume agitation.
- 12) Use the spray solution when mixing is complete.
- 13) Maintain agitation of the diluted pesticide mix during transport and application.
- 14) It is unlawful to use any registered pesticide, including WSP's, in a manner inconsistent with its labeling.

# Observe the following precautions when mixing:

- Make sure all spray and application equipment are clean prior to mixing Arroz 80; clean equipment well
  after completing application of Arroz 80 (see PREPARATION AND CLEANUP OF APPLICATION EQUIPMENT,
  below)
- Do not allow Arroz 80 packets to become wet prior to mixing, and do not handle packets with wet gloves
- If any Arroz 80 packets are unused, outer container must be closed and tightly resealed to protect the packets and preserve the integrity of the water soluble packaging
- Make sure that water soluble packets have completely dissolved prior to adding any additional ingredients (it should take the packets about 5 minutes to wholly dissolve)
- Cold water, insufficient agitation or water with high rates of sulfur or boron could unfavorably affect dispersal of Arroz 80, resulting in potential clogging of nozzle or spray screen

Arroz 80 can be kept in the mix or spray tank for three days following mixing, without a reduction in efficacy. If spray solution is held for a period of time, be sure to mix/agitate fully prior to use.

# PREPARATION AND CLEANUP OF APPLICATION EQUIPMENT

PRECAUTION: DO NOT USE chlorine bleach for cleaning or mix chlorine bleach with ammonia. Make certain that all traces of any fertilizer containing ammonia or ammonium are completely removed before adding any chlorine (including chlorine bleach) to the mix tank.

Adverse crop reaction may result if residues of previously applied products are left in application equipment, or if residues of Arroz 80 are left in spray equipment following application. Clean spray equipment prior to using Arroz 80, and clean immediately after treatment with Arroz 80, and before applications with other products.

Before using Arroz 80, completely drain, rinse and clean all spray and mixing equipment, following procedures instructed for the previously used product. If previously sprayed product is not completely removed, Arroz 80 residues could collect in the spray equipment resulting in clogged equipment or greater difficulty in cleaning after use of Arroz 80

After spraying Arroz 80, use the following procedure to clean equipment:

- 1. Remove any visible residue
- 2. Drain the spray application equipment, including tank, hoses, spray boom and nozzles.
- 3. Fill tank 50% full of water, spraying the interior sides of the tank while filling
- 4. Use a tank cleaner that DOES NOT contain chlorine, and fill the remainder of the tank with clean water. Follow tank cleaner instructions regarding agitation/recirculation of the cleaner throughout the tank, boom and hoses; completely flush boom and hoses prior to draining the tank
- 5. Rinse with clean water to remove tank cleaner from tanks, boom, hoses, nozzles and strainers (follow any directions provided with tank cleaner)

- 6. Fill tank 50% full of water, and add 3% active household ammonia (1 gallon per every 100 gallons tank size). Finish filling the tank with clean water, and recirculate the ammonia solution for 15 minutes; completely flush tank, boom, hoses, nozzles and strainers prior to draining the tank
- 7. Remove strainers, screens and nozzles, and clean independently in a solution of 3% active household ammonia and water, then replace all strainers, nozzles and screens
- 8. Repeat step 6 (ammonia cleaning step)
- 9. Completely rinse thank and equipment with clean water, and flush clean water through hoses, boom and nozzles so that all ammonia is removed

Dispose rinse solution at an approved waste disposal location or on-site.

# USE DIRECTIONS: DRY-SEEDED OR WATER-SEEDED RICE – U.S. RICE GROWING REGIONS (Except California)

Arroz 80 can be applied in the following use patterns, either by itself or as a tank mix partner (see **TANK MIXES** section, below):

- Single Arroz 80 application (solo or tank mix)
- Early postemergence Arroz 80 application (tank mixed with preemergence herbicide) followed by pre- or post- flood Arroz 80 application (solo or tank mix)
- Mid postemergence Arroz 80 application (solo or tank mix) followed by pre-or post-flood Arroz 80 application

<u>Single Application --</u> See **WEEDS AND USE RATES** chart for rates and timings and weeds controlled <u>Early Postemergence</u> -- When rice has reached the 2-leaf growth stage (when 2<sup>nd</sup> leaf is fully expanded), make first application of Arroz 80 at 0.2 oz. / A tank mixed with a rice preemergence herbicide containing the active ingredients thiobencarb (including Bolero® 8 EC), clomazone (including Command® 3ME), quinclorac (including Facet®) or pendimethalin (including Prowl® 3.3 EC) -- see **TANK MIX** section, below, and check tank mix partner label for specified use rate. Make second application of Arroz 80 at 0.53 to 0.67 oz./A just before permanent flood, or early post-flood (see **WEEDS AND USE RATES** chart).

<u>Mid Postemergence --</u> When barnyardgrass reaches the 3- to 5-leaf growth stage, make first application of Arroz 80 at 0.5 oz. / A. Make second application of Arroz 80 at 0.5 oz./a just before permanent flood, or early post-flood (see **WEEDS AND USE RATES** chart).

WEEDS AND USE RATES			
FOR USE IN RICE GROWING REGIONS (EXCEPT CALIFORNIA)			
Weed	Weed Size	Control or Suppression	Use Rate (oz. / A)
Alligatorweed (Alternanthera philoxeroides)	Up to 10 inch runners	S	0.53-0.57
Annual Rice Flatsedge (Cyperus iria)	1 -3 tillers	С	0.57-0.67
Barnyardgrass / Junglerice <sup>1</sup> ( <i>Echinochloa crus-galli</i> /	2-leaf up to 5 leaf	С	0.4
Echinochloa colona)	5 leaf through 1 tiller	С	0.53
	Up to 3 tillers	С	0.57
Barnyardgrass / Junglerice ( <i>Echinochloa crus-galli / Echinochloa colona</i> ) – Late Application <sup>2</sup>		S	0.57-0.67
Barnyardgrass, perennial (Echinochloa polystachya)	Up to 2 tillers	S	0.53-0.57
Baronet grass (bayonetgrass) – (Echinochloa pungens) – Post Flood Only	1 to 3 tillers	С	0.57-0.67
Dayflower (Commelina communis)	1 leaf up to 4 leaf	С	0.4-0.57
Ducksalad (Heteranthera spp.)	1 leaf up to 4 leaf	С	0.4-0.57
Eclipta ( <i>Eclipta</i> spp.)	1 leaf up to 4 leaf	S	0.4-0.57

Gooseseed (Sphenoclea zeylanica)	1 leaf up to 4 leaf	С	0.4-0.57
Hemp Sesbania (Sesbania exaltata)	3 to 18 inches	С	0.4-0.57
Johnsongrass (Sorghum helepense)	3 to 24 inches	С	0.4-0.57
Jointvetch, Indial (Aeschynomene indica)	3 to 18 inches	С	0.4-0.57
Jointvetch, Northern (Aeschynomene virginica)	3 to 18 inches	С	0.4-0.57
Knotgrass ( <i>Paspalum ditichum</i> ) – <b>Post Flood Only</b> <sup>3</sup>	Up to Heading	S	0.53-0.57
Morningglory, entireleaf (Ipomoea hederacea)	1 to 4 inches	S	0.4-0.57
Morningglory, pitted ( <i>Ipomoea lacunose</i> )	1 to 4 inches	S	0.4-0.57
Pigweeds (Amaranthus spp.)	1 to 12 inches	S	0.4-0.57
Redstem (Ammannia spp.)	1 to 4 inches	S	0.4-0.57
Smartweed, Pennsylvania ( <i>Polygonum</i>	1 to 4 inches	С	0.4-0.57
pensylvanicum)	4 to 24 inches	S	0.4-0.57
Texas / Mexicanweed (Caperonia spp.)	1 leaf up to 4 leaf	S	0.4-0.57
Water Hyssop (Bacopa rotundifolia)	1 leaf up to 4leaf	С	0.4-0.57

<sup>&</sup>lt;sup>1</sup> Includes propanil and or Facet (quinclorac) resistant barnyardgrass

- When making an early postemergence split application, make application to rice that has reached the 2-leaf growth stage (2<sup>nd</sup> leaf fully expanded) or after panicle initiation growth stage (green ring appears, just before joint movement) at the lower specified use rate
- For all other applications, do not apply to rice until it has reached the 3-leaf growth stage (3<sup>rd</sup> leaf fully expanded)
   irrespective of seeding method with a root system totally underneath soil surface. Application can be made up to the point of panicle initiation (green ring appears, just before joint movement).
- After application of Arroz 80, rice plants may exhibit temporary chlorosis, stunting or other injury. This injury is not permanent, and rice plants will recover. Top dressing with fertilizer can hasten recovery.
- If rice is not fully pegged (root system totally underneath soil surface), application of Arroz 80 could result in considerable injury, despite growth stage.
- **Pre-Flood Application** When applying Arroz 80 pre-flood, optimum results are obtained when soil is wet to the surface and weeds are actively growing. Allow herbicide at least one day for uptake after application before establishing the permanent flood. If permanent flood is delayed (to allow rice to become tolerant to flood), flush as required to support rice growth and weed growth (which, in turn, supports herbicide uptake). Herbicidal efficacy can be compromised if soil becomes dry after application of Arroz 80. For best results, establish permanent flood 2 to 7 days after application of Arroz 80. Weed reinfestation and/or reinvigorated growth of existing weeds can result if permanent flood is held off too long.
- **Post-Flood Application** When applying Arroz 80 post-flood, optimum results are obtained when flood water is adjusted so that a minimum of 70% of the weed plant is above the water level. 2 to 3 days after treatment, water level can be raised to normal flood level.
- For best results make application of Arroz 80 when nighttime temperatures have been at 60° F or higher for at least 3 consecutive nights before application. Lower nighttime temperatures can result in reduced herbicidal efficacy.
- Rice under stress due to environmental conditions (drought, temperature, etc.) or other conditions (nutrient
  deficiencies or injury due to herbicide or fertilizer applications) which reduce the plant's metabolism and
  development can exhibit sensitivity to Arroz 80. Likewise, weeds under similar stress will not be as susceptible
  to Arroz 80 treatment. Do not apply to stressed rice or weeds.

<sup>&</sup>lt;sup>2</sup> If barnyardgrass reaches the 4-tiller up to booting growth stages, it has begun to adversely affect rice yields. Suppression or control at this time will be beneficial by reducing production of barnyardgrass seed, and by making the most of remaining rice yield

<sup>&</sup>lt;sup>3</sup> For best results in suppressing knotgrass, apply before knotgrass heading, after rice is in permanent flood, when a minimum of 70% of the knotgrass is above the water level.

- Medium grain rice varieties, and pubescent (hairy) leaf rice varieties may exhibit more sensitivity to Arroz 80 than long grain or glabrous (smooth) leaf rice varieties. Rice varieties with low seedling vigor (including M-206 or Japanese cultivars) may exhibit sensitivity to Arroz 80, particularly if they are under environmental or other stress. Do not apply Arroz 80 to Bengal rice variety.
- Arroz 80 can be applied to hybrid varieties of rice, including Clearfield rice
- When a use rate range is given for a particular weed species, use the upper end of the specified rate range if weed infestation is elevated or if weeds are approaching upper end of specified weed size. If infestation is severe, a second application of Arroz 80 or another herbicide may be required for control.
- Growers can make additional applications of Arroz 80, as long as the maximum seasonal application rate of 1.06 oz. product per acre and application interval of 3 weeks are observed.

# **ADDITIVES**

**Surfactants** - Apply Arroz 80 with a surfactant, unless specific label section or supplemental label indicates otherwise. See 'Arroz 80 Approved Surfactants' bulletin for a list of permitted surfactants and use rates. Use of any surfactant other than those indicated in the approved surfactants bulletin is done at the sole discretion and risk of the user.

**Urea-ammonium Nitrate (UAN)** – If chosen surfactant does not already contain UAN, addition of 2% volume/volume of 28% to 32% UAN, in addition to an approved surfactant can heighten the efficacy of Arroz 80.

#### **TANK MIXES**

For broader weed spectrum control, Arroz 80 may be used in combination with other herbicides. It is the pesticide user's responsibility to ensure that all products are registered for 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 for Arroz 80 include products containing the following herbicide active ingredients:

2,4-D

Bensulfuron methyl (including Londax®)

Clomazone (including Command 3ME)

Diflubenzuron (including Cavalier 2L or Dimilin®)

Fenoxaprop-p-ethyl (including Ricestar® HT)

Halosulfuron-methyl (including Permit®)

Pendimethalin (including Prowl 3.3 EC)

Quinclorac (including Facet)

Sodium acifluorfen (including Blazer® or Ultra Blazer)

Thiobencarb (including Bolero 8 EC)

Triclopyr (including Grandstand® R)

Arroz 80 can also be tank mixed with Clearpath® or Newpath® herbicides in Clearfield rice only.

Arroz 80 can also be tank mixed with other pesticides, including those containing the insecticide active ingredients lambda cyhalothrin (including Karate<sup>®</sup> or Karate Z) or zeta-cypermethrin (including Fury<sup>®</sup>); or fungicide active ingredient azoxystrobin (including Quadris<sup>®</sup>).

Take care when tank mixing Arroz 80 with products containing the herbicide active ingredient carfentrazone-ethyl (including Aim\*). Carfentrazone ethyl can result in antagonism to bispyribac sodium activity, and may result in the need for an additional application of Arroz 80 or other herbicide. If applying an Arroz 80 – carfentrazone ethyl tank mix, go up to the next Arroz 80 use rate for the particular weed size, and limit use rate of Aim to no more than 1 fl. oz. product per acre (please refer to Aim label for current labeled use rate on rice – if it is lower than 1 fl. oz. per acre, DO NOT EXCEED the labeled rate).

When tank mixing Arroz 80 with quinclorac, use adjuvants/surfactants instructed for Arroz 80, and do not include a crop oil concentrate.

Not all rice varieties have been tested with all possible tank mix combinations. If you are not familiar with an Arroz 80 tank mix with any of the listed products, or a tank mix with a pesticide product that is not listed in this section, it is your responsibility to test the combination for crop safety on a small portion of your rice crop to ensure that a phytotoxic or other adverse response will not occur. In addition, test the physical compatibility of Arroz 80 with tank mix partners before use. In a lidded glass jar (~1 quart size), add all mix partners, in their relative proportions. Invert, shake or mix the jar thoroughly. Observe mixture for approximately 30 minutes (though signs of incompatibility will often be seen within 5 minutes).

#### **Tank Mix Restrictions:**

- To avoid injury or antagonism, do not tank mix Arroz 80 with pesticide products containing the active ingredients malathion, methyl parathion or propanil
- Do not apply Arroz 80 within 7 days of treatment with malathion or methyl parathion

# **USE RESTRICTIONS**

- Do not irrigate other crops with water that has been drained directly from fields treated with Arroz 80
- Field ends cannot be double-sprayed
- Apply a maximum 1.06 oz. Arroz 80 per acre per year. Do not make application to second crop (stubble/ratoon crop) rice.
- Observe a 3-week application interval for subsequent applications of Arroz 80
- Do not treat stressed rice or weeds with Arroz 80
- If fields have been land leveled and have extreme cut and heavy fill areas, Arroz 80 cannot be applied to the first rice crop in these fields (this restriction does not pertain to maintenance leveling).
- If commercial crayfish farming is practiced in rice paddies, Arroz 80 cannot be applied.

# STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in a cool dry place. Keep pesticide in original container. Keep container closed when not in use. Do not put concentrate or dilute into food or drink containers. Not for use or storage in or around the home. For help with any spill, leak, fire, or exposure involving this material, call day or night 800-424-9300.

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

# **CONTAINER HANDLING:**

[For outer bag containing water soluble packets]

[Nonrefillable outer bag. Do not reuse or refill the outer bag. Offer for recycling, if available or dispose of outer bag in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.]

[For bulk fiber drum with liner]

[Nonrefillable drum. Do not reuse or refill this container. Offer for recycling, if available, or dispose of drum in a sanitary landfill or by incineration. Liner: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into packaging equipment. Offer for recycling, if available, or dispose of liner in a sanitary landfill or by incineration.]

#### LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conforms to the chemical description on the label; and (b) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions. THIS WARRANTY DOES NOT EXTEND TO THE USE OF THIS PRODUCT CONTRARY TO

LABEL INSTRUCTIONS, OR UNDER CONDITIONS NOT REASONABLY FORESEEABLE.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH HEREIN. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE MANUFACTURER NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE, TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF QUALITY OR PERFORMANCE. THIS WARRANTY DOES NOT EXTEND TO, AND THE BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS, WARNINGS OR CAUTIONS.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN TORT, CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF, OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER OR SELLER SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

AMVAC offers this product, and Buyer accepts it, subject to the foregoing Limited Warranty which may be varied only by agreement in writing signed by an authorized representative of AMVAC.

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AMVAC Chemical Corporation 4695 MacArthur Court, Suite 1200 Newport Beach, CA 92660 U.S.A.

# Arroz 80 CA

# Herbicide

For use on rice in California only.

ACTIVE INGREDIENT:	By Wt.
*Bispyribac-sodium	80.0%
OTHER INGREDIENTS:	<u>20.0%</u>
TOTAL:	100.0%

# CAUTION

Γ		
	FIRST AID	
If swallowed	Call a poison control center or doctor immediately for treatment advice.	
	Have person sip a glass of water if able to swallow.	
	Do not induce vomiting unless told to by the poison control center or doctor.	
	Do not give anything to an unconscious person.	
If in eyes	Hold eye open and rinse slowly and gently with water for 15-20 minutes.	
	Remove contact lenses, if present, after the first 5 minutes, then continue rinsing	
	eye.	
	Call a poison control center or doctor for treatment advice.	
If on skin or clothing	Take off contaminated clothing.	
	Rinse skin immediately with plenty of water for 15-20 minutes.	
	Call a poison control center or doctor for treatment advice.	
If inhaled	Move person to fresh air.	
	• If person is not breathing, call 911 or an ambulance, then give artificial respiration,	
	preferably mouth-to-mouth, if possible.	
	Call a poison control center or doctor for further treatment advice.	
	EMERGENCY INFORMATION	
Have the product cor	ntainer or label with you when calling a poison control center or doctor, or going for	
treatment.		
FOR THE FOLLOWING E	EMERGENCIES, PHONE 24 HOURS A DAY:	
For Medical Emergenci	ies phone:1-888-681-4261	
For Transportation Em	ergencies, including spill, leak or fire, phone: CHEMTREC®1-800-424-9300	
For Product Use Inform	nation phone: AMVAC®1-888-462-6822	

See booklet for additional Precautionary Statements and Directions for Use.

EPA Reg. No. 5481-649	EPA Est. No
Net Contents:	





[Manufactured for:]
AMVAC Chemical Corporation
4695 MacArthur Court, Suite 1200
Newport Beach, CA 92660 U.S.A.

<sup>\*</sup>Sodium 2,6-bis[(4,6-dimethoxypyrimidin-2-yl)oxy]benzoate

# PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Causes moderate eye irritation. Harmful if swallowed or absorbed through the skin. Avoid contact with eyes, skin, or clothing. Avoid breathing dust or spray mist.

# PERSONAL PROTECTIVE EQUIPMENT (PPE)

# Applicators and other handlers must wear:

- Long-sleeved shirt and long pants,
- Chemical-resistant gloves such as Barrier Laminate or Butyl Rubber ≥ 14 mils or Nitrile Rubber ≥ 14 mils or Viton® Rubber ≥ 14 mils,
- Shoes plus socks

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

#### **USER SAFETY RECOMMENDATIONS**

#### **Users should:**

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

# **PHYSICAL OR CHEMICAL HAZARDS**

Do not mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

# **ENGINEERING CONTROLS STATEMENT:**

Water soluble packets, when used correctly, qualify as a closed mixing/loading system under the Worker Protection Standard [40 CFR 170.607(d)]. Mixers and loaders handling this product while it is enclosed in intact water soluble packets may elect to wear reduced PPE of long-sleeved shirt, long pants, shoes, socks.

When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

# **ENVIRONMENTAL HAZARDS**

This product is toxic to non-target plants. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters.

#### SURFACE WATER ADVISORY STATEMENT:

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of bispyribac-sodium from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

### **GROUNDWATER ADVISORY STATEMENT:**

This chemical has properties and characteristics associated with chemicals detected in groundwater. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow. **NON-TARGET ORGANISM ADVISORY STATEMENT:** 

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

# **DIRECTIONS FOR USE**

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

READ ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

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

# **AGRICULTURAL USE REQUIREMENTS**

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

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

- Coveralls
- Chemical-resistant gloves, such as Barrier Laminate or Butyl Rubber ≥ 14 mils or Nitrile Rubber ≥ mils and
- Shoes plus socks

# **PRODUCT INFORMATION**

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

Arroz 80 CA provides control of listed weeds that infest rice. It behaves selectively, by postemergent contact to the emerged weeds. Arroz 80 CA is a Group 2 herbicide which works by inhibiting the ALS (acetolactate synthase) enzyme in the weeds. Vulnerable weeds will stop growing and take on a yellow color within 3 to 7 days after application; will exhibit browning within 7 to 14 days after application; will experience death of stem and weeds 14 to 21 days after application (complete control after application of Arroz 80 CA will occur in 14 to 21 days). Arroz 80 CA is a contact herbicide, and does not have any soil activity, therefore make certain that weeds are adequately covered with Arroz 80 CA for desired results. Eight hours after treatment Arroz 80 CA is considered rainfast. Arroz 80 CA has a broad application period, and can be a key component in a weed management system, when employed alongside an effective resistance management strategy. After application of this product, some temporary injury to rice may be observed. This will not affect yields. Any injury to rice can be mitigated by top dressing with fertilizer (which will hasten injury recovery). Arroz 80 CA will not provide any residual control or prevent reinfestation of weeds that germinate after treatment.

#### RESISTANCE MANAGEMENT

Bispyribac sodium, the active ingredient in Arroz 80 CA is a Group 2 herbicide (ALS inhibitor). Plants with resistance to Group 2 herbicides can occur in any weed population, and may not be effectively managed with Group 2 herbicides. Resistant biotypes may dominate the weed population if herbicides with the same mode of action or class of chemistry are continually applied over consecutive years, resulting in an increasing or complete loss of weed control over time. Suitable resistance management approaches must be employed to delay herbicide resistance.: Take one or more of the following steps:

- Use another herbicide from a different class of herbicide in consecutive years that controls the same weeds in a field.
- Use known effective mechanical or cultural practices (crop rotation, cultivation, etc.), as well as agronomic practices that improve crop performance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses
  historical information related to herbicide use and crop rotation, and that considers tillage ( or other
  mechanical control methods), cultural ( e.g., higher crop seeding rates; precision fertilizer application
  method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties)
  and other management practices.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- After applying herbicides, scout fields to determine the effectiveness of herbicides and other weed control cultural or mechanical practices, paying particular attention to identify weed profile shift or resistance. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.
- For further information or to report any suspected resistance to your AMVAC representative or at 1-888-462-6822.
- Use full listed application rate, and follow label instructions for application timing (particularly for effectiveness against resistant weed species).
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.

Any herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides. Other factors, such as enhanced weed metabolism, may also occur and contribute to weed resistance. Consult your state cooperative extension service, professional consultants, or other qualified authorities for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

#### SPRAY DRIFT MANAGEMENT

# SPRAY DRIFT AERIAL APPLICATIONS

- Do not release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Applicators must use ½ swath displacement upwind of the downwind edge of the field.
- Do not apply when wind speeds exceed 15 mph at the application site. If the wind speed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed wing aircraft and 90% or less of the rotor diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the field.
- Do not apply during temperature inversions.

# SPRAY DRIFT GROUND BOOM APPLICATIONS

- Users must only apply with the release height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy unless making a turf, pasture, or rangeland application, in which case applicators may apply with a nozzle height no more than 4 feet above the ground.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

# SPRAY DRIFT BOOM-LESS GROUND APPLICATIONS

- Applicators are required to use a medium or coarser droplet size (ASABE S572.1) for all applications.
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

# **SPRAY DRIFT ADVISORIES**

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON TARGET SITES AND ENVIRONMENTAL CONDITIONS.

- 1. Where states have more stringent regulations, they must be observed.
- 2. Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.
- 3. When making tank mixture application follow the most restrictive label directions, including application buffer zones, of each product in the mixture.

When applying Arroz 80 CA (aerially or by ground; alone or in combination with other products) next to non-rice crops, observe the following buffer zones:

Application Type	Location	Wind Speed	Required buffer zone
Aerial	Downwind	2-8 mph	½ mile (2640 feet)
Aerial	Upwind	2-8 mph	250 feet
Ground	Downwind	2-8 mph	250 feet

# **IMPORTANCE OF DROPLET SIZE**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

# Controlling Droplet Size - Ground Boom

**Volume** – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.

**Pressure** – Use the lowest spray pressure recommended for the nozzle to produce the target spray pressure volume and droplet size.

**Spray Nozzle** – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

# **Controlling Droplet Size - Aircraft**

Adjust nozzles - Follow nozzle manufacturers' recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

# **Boom Height - Ground Boom**

For ground equipment, the boom should remain level with the crop and have minimal bounce.

# Release Height - Aircraft

Higher release heights increase the potential for spray drift.

**Boom-less Ground Applications:** setting nozzles at the lowest effective height will help reduce the potential for spray drift.

Handheld Technology Applications: take precautions to minimize spray drift.

# **Shielded Sprayers**

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

# Wind

Drift potential generally increases with wind speed.

AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

# **Temperature and Humidity**

When making applications in hot and dry conditions, use larger droplets reduce effects of evaporation.

# **Temperature Inversions**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or 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. Avoid applications during temperature inversions.

#### **Sensitive Areas**

Apply this pesticide only 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).

#### **APPLICATION INSTRUCTIONS**

For optimum efficacy apply the spray solution in a manner that promotes maximum coverage, i.e. proper water volume, correct spray nozzles, optimum weed size, etc. Arroz 80 can be applied:

- By aircraft, with a total spray volume of 10 gallons or greater per acre
- By ground equipment with a total spray volume of 15 to 20 gallons or greater per acre

If spray volume is not sufficient, weed control can be compromised. If foliage canopy is heavy, use enough spray volume to reach and adequately cover weeds. Any factor that unfavorably affects weed coverage can result in compromised weed control. Buffer the application water if the pH is above 7.0 or below 6.0. Do not use turbid, high sediment or ditch water.

#### INSTRUCTIONS FOR USING WATER SOLUBLE PACKAGES DIRECTLY INTO SPRAY TANKS:

Water Soluble Packages (WSPs) are designed to dissolve in water. Agitation may be used, if necessary, to help dissolve the WSP. Failure to follow handling and mixing instructions can increase your exposure to the pesticide products in WSPs. WSPs, when used properly, qualify as a closed mixing/loading system under the Agricultural Worker Protection Standard [40 CFR 170.607(d)].

# HANDLING INSTRUCTIONS

Follow these steps when handling pesticide products in WSPs:

- 1) Mix in spray tank only
- 2) Handle WSP(s) in a manner that protects package from breakage and/or unintended release of contents. If package is broken, put on PPE required for clean-up and then continue with mixing instructions.
- 3) Keep the WSP(s) in outer packaging until just before use.
- 4) Keep the WSP dry prior to adding to the spray tank.
- 5) Handle with dry gloves and according to the label instructions for PPE.
- 6) Keep WSP intact. Do not cut or puncture WSP.
- 7) Reseal the WSP outer package to protect any unused WSP(s)

# **MIXING INSTRUCTIONS**

Follow the steps below when mixing this product, including if tank mixed with other pesticide products. If being tank mixed, the mixing directions 1 through 9 below take precedence over the mixing directions of the other tank mix products. WSPs may, in some cases, be mixed with other pesticide products so long as the directions for use of all mixed products do not conflict. Do not tank mix this product with products that prohibit tank mixing or have conflicting mixing directions.

- 1) If a basket or strainer is present in the tank hatch, remove prior to adding the WSP to the tank.
- 2) Fill tank with water to approximately one-third to one-half of the desired final volume of spray.
- 3) Stop adding water and stop any agitation.
- 4) Place intact/unopened WSP(s) into the tank.
- 5) Do not spray water from a hose or fill pipe to break or dissolve the WSP(s)
- 6) Start mechanical and recirculation agitation from the bottom of tank without using any overhead recirculation, if possible. If overhead recirculation cannot be turned off, close the hatch before starting agitation.
- 7) Dissolving the WSP(s) may take up to 5 minutes or longer, depending on water temperature, water hardness and intensity of agitation.
- 8) Stop agitation before tank lid is opened
- 9) Open the lid to the tank, exercising caution to avoid contact with dusts or spray mix, to verify that the WSP's have fully dissolved and the contents have been thoroughly mixed into the solution.
- 10) Do not add other allowed products or complete filling the tank until the bags have fully dissolved and pesticide is thoroughly mixed.
- 11) Once the WSP have fully dissolved and any other products have been added to the tank, resume filling the tank with water to the desired level, close the tank lid, and resume agitation.
- 12) Use the spray solution when mixing is complete.
- 13) Maintain agitation of the diluted pesticide mix during transport and application.
- 14) It is unlawful to use any registered pesticide, including WSP's, in a manner inconsistent with its labeling.

# Observe the following precautions when mixing:

- Make sure all spray and application equipment are clean prior to mixing Arroz 80 CA; clean equipment well
  after completing application of Arroz 80 CA (see PREPARATION AND CLEANUP OF APPLICATION
  EQUIPMENT, below)
- Do not allow Arroz 80 CA packets to become wet prior to mixing, and do not handle packets with wet gloves
- If any Arroz 80 CA packets are unused, outer container must be closed and tightly resealed to protect the packets and preserve the integrity of the water soluble packaging
- Make sure that water soluble packets have completely dissolved prior to adding any additional ingredients (it should take the packets about 5 minutes to wholly dissolve)
- Cold water, insufficient agitation or water with high rates of sulfur or boron could unfavorably affect dispersal of Arroz 80 CA, resulting in potential clogging of nozzle or spray screen

Arroz 80 CA can be kept in the mix or spray tank for three days following mixing, without a reduction in efficacy. If spray solution is held for a period of time, be sure to mix/agitate fully prior to use.

# PREPARATION AND CLEANUP OF APPLICATION EQUIPMENT

PRECAUTION: DO NOT USE chlorine bleach for cleaning or mix chlorine bleach with ammonia. Make certain that all traces of any fertilizer containing ammonia or ammonium are completely removed before adding any chlorine (including chlorine bleach) to the mix tank.

Adverse crop reaction may result if residues of previously applied products are left in application equipment, or if residues of Arroz 80 CA are left in spray equipment following application. Clean spray equipment prior to using Arroz 80 CA, and clean immediately after treatment with Arroz 80 CA, and before applications with other products.

Before using Arroz 80 CA, completely drain, rinse and clean all spray and mixing equipment, following procedures instructed for the previously used product. If previously sprayed product is not completely removed, Arroz 80 CA

residues could collect in the spray equipment resulting in clogged equipment or greater difficulty in cleaning after use of Arroz 80 CA.

After spraying Arroz 80 CA, use the following procedure to clean equipment:

- 1. Remove any visible residue
- 2. Drain the spray application equipment, including tank, hoses, spray boom and nozzles.
- 3. Fill tank 50% full of water, spraying the interior sides of the tank while filling
- 4. Use a tank cleaner that DOES NOT contain chlorine, and fill the remainder of the tank with clean water. Follow tank cleaner instructions regarding agitation/recirculation of the cleaner throughout the tank, boom and hoses; completely flush boom and hoses prior to draining the tank
- 5. Rinse with clean water to remove tank cleaner from tanks, boom, hoses, nozzles and strainers (follow any directions provided with tank cleaner)
- 6. Fill tank 50% full of water, and add 3% active household ammonia (1 gallon per every 100 gallons tank size). Finish filling the tank with clean water, and recirculate the ammonia solution for 15 minutes; completely flush tank, boom, hoses, nozzles and strainers prior to draining the tank
- 7. Remove strainers, screens and nozzles, and clean independently in a solution of 3% active household ammonia and water, then replace all strainers, nozzles and screens
- 8. Repeat step 6 (ammonia cleaning step)
- 9. Completely rinse thank and equipment with clean water, and flush clean water through hoses, boom and nozzles so that all ammonia is removed

Dispose rinse solution at an approved waste disposal location or on-site.

# **USE DIRECTIONS: DRY-SEEDED OR WATER-SEEDED RICE**

Arroz 80 CA can be applied to dry seeded or water seeded rice in the State of California. For use rates, see **WEEDS AND USE RATES** chart.

WEEDS AND USE RATES			
FOR USE IN RICE GROWING REGIONS IN THE STATE OF CALIFORNIA			
Weed	Weed Size	Control or	Use Rate
		Suppression	(oz. / A)
Arrowhead, California (Sagittaria montevidensis spp.	1 leaf up to flower	С	0.53-0.67
Calycina)	initiation		
Barnyardgrass (Echinochloa crus-galli)	2 leaf up to 2 tillers	С	0.53-0.67
Ducksalad (Heteranthera spp.)	1 leaf up to "spoon leaf"	С	0.53-0.67
Gregg's Arrowhead (Sagittaria logiloba)	1 leaf up to flower initiation	С	0.53-0.67
Monochoria (Monochoria viginalis)	1 leaf up to flower initiation	С	0.53-0.67
Redstem (Ammannia spp.)	1 to 4 inches	S	0.53-0.67
Ricefield Bulrush (Scirpus mucronatus)	2 leaf up to flower initiation	S	0.53-0.67
Smallflower Umbrellaplant (Cyperus difformis)	1 to 4 inches	S	0.67-0.8
Watergrass (Echinochloa crus-galli var. oryzicola / Echinochloa oryzoides)	2 leaf up to 2 tillers	С	0.53-0.67
Watergrass, resistant biotypes <sup>1</sup> (Echinochloa crus- galli var. oryzicola / Echinochloa oryzoides)	5 leaf up to 2 tillers	С	0.67-0.8
Watergrass, resistant biotypes¹/ rice mimic (Echinochloa phyllopogon²)	5 leaf up to 2 tillers	С	0.8
Waterhyssop (Bacopa rotundifolia)	1 leaf up to 4 leaf	С	0.53-0.67

Waterplantain (Alisma triviale)	1 leaf up to flower	С	0.53-0.67
	initiation		

<sup>&</sup>lt;sup>1</sup>These species can display resistance to various herbicides in localized, specific areas. Consult your extension agent or crop advisor for further information if resistant species are found in your fields. Additionally, see resistance management section of this label for information that will help extend the effectiveness of this product and other rice herbicides

- Do not apply to rice until it has reached the 4-leaf growth stage (4<sup>th</sup> leaf fully expanded) irrespective of seeding method with a root system totally underneath soil surface. Application can be made up to the point of panicle initiation (green ring appears, just before joint movement).
- Pinpoint or Leathers Flood Treatment Once rice has been seeded during the first (seedling) flood, drain field before shoot growth begins and when the root is around ¼ inches in length, which will permit the root to peg to the soil. After draining, once rice has reached the 4-leaf stage, and root system is totally underneath the soil surface, rice can be treated with Arroz 80 CA. Optimum results are obtained when soil is wet to the surface and weeds are actively growing. Herbicidal efficacy can be compromised if soil becomes dry after application of Arroz 80 CA. Wait 2 to 3 days after application and then flood field to pinpoint flood level. Rice plants can be stressed, or herbicidal efficacy can be compromised due to extended drainage.
- Dry Seeded Pre-Flood Treatment When applying Arroz 80 CA pre-flood, optimum results are obtained when soil is wet to the surface and weeds are actively growing. Allow herbicide at least one day for uptake after application before establishing the permanent flood. If permanent flood is delayed (to allow rice to become tolerant to flood), flush as required to support rice growth and weed growth (which, in turn, supports herbicide uptake). Herbicidal efficacy can be compromised if soil becomes dry after application of Arroz 80 CA. For best results, establish permanent flood 2 to 7 days after application of Arroz 80 CA. Weed reinfestation and/or reinvigorated growth of existing weeds can result if permanent flood is held off too long
- **Post-Flood Treatment** When applying Arroz 80 CA post-flood, optimum results are obtained when flood water is adjusted so that a minimum of 70% of the weed plant is above the water level. 2 to 3 days after treatment, water level can be raised to normal flood level.
- After application of Arroz 80 CA, rice plants may exhibit temporary chlorosis, stunting or other injury. This injury is not permanent, and rice plants will recover. Top dressing with fertilizer can hasten recovery.
- If rice is not fully pegged (root system totally underneath soil surface), application of Arroz 80 CA could result in considerable injury, despite growth stage.
- Rice under stress due to environmental conditions (drought, temperature, etc.) or other conditions (nutrient
  deficiencies or injury due to herbicide or fertilizer applications) which reduce the plant's metabolism and
  development can exhibit sensitivity to Arroz 80 CA. Likewise, weeds under similar stress will not be as
  susceptible to Arroz 80 CA treatment. Do not apply to stressed rice or weeds.
- Pubescent (hairy) leaf rice varieties may exhibit more sensitivity to Arroz 80 CA than glabrous (smooth) leaf rice
  varieties. Rice varieties with low seedling vigor (including M-206 or Japanese cultivars) may exhibit sensitivity to
  Arroz 80 CA, particularly if they are under environmental or other stress. Do not apply Arroz 80 CA to CM-101
  rice variety.
- Arroz 80 CA can be applied to hybrid varieties of rice, including Clearfield rice
- For best results make application of Arroz 80 CA when nighttime temperatures have been at 55° F or higher for at least 3 consecutive nights before application. Lower nighttime temperatures can result in reduced herbicidal efficacy.

<sup>&</sup>lt;sup>2</sup> For the control of *Echinochloa phyllopogon*, apply Arroz 80 CA at the specified rate with a surfactant, but do not tank mix with other herbicides or insecticides. If infestation is severe, treatment with another herbicide (such as propanil) may be necessary.

- When a use rate range is given for a particular weed species, use the upper end of the specified rate range if weed infestation is elevated or if weeds are approaching upper end of specified weed size. If infestation is severe, a second application of Arroz 80 CA or another herbicide may be required for control.
- Growers can make additional applications of Arroz 80 CA, as long as the maximum seasonal application rate of 1.06 oz. product per acre and application interval of 3 weeks are observed.

# **ADDITIVES**

**Surfactants** -- Apply Arroz 80 CA with a surfactant, unless specific label section or supplemental label indicates otherwise. See 'Arroz 80 CA Approved Surfactants' bulletin for a list of permitted surfactants and use rates. Use of any surfactant other than those indicated in the approved surfactants bulletin is done at the sole discretion and risk of the user.

**Urea-ammonium Nitrate (UAN)** -- If chosen surfactant does not already contain UAN, addition of 2% volume/volume of 28% to 32% UAN, in addition to an approved surfactant can heighten the efficacy of Arroz 80 CA.

# **TANK MIXES**

For broader weed spectrum control, Arroz 80 CA may be used in combination with other herbicides. It is the pesticide user's responsibility to ensure that all products are registered for 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 for Arroz 80 CA include products containing the following herbicide active ingredients:

2,4-D
Bensulfuron methyl (including Londax<sup>®</sup>)
Diflubenzuron (including Cavalier 2L or Dimilin<sup>®</sup>)
Halosulfuron-methyl (including Sempra<sup>®</sup>)

Pendimethalin (including Prowl® 3.3 EC) Thiobencarb (including Abolish®) Triclopyr (including Grandstand® R CA)

Arroz 80 CA can also be tank mixed with other pesticides, including those containing the insecticide active ingredient lambda cyhalothrin (including Warrior\*); or fungicide active ingredient azoxystrobin (including Quadris\*).

Take care when tank mixing Arroz 80 CA with products not listed on this label. It could cause antagonism to bispyribac sodium activity, and may result in the need for an additional application of Arroz 80 CA or other herbicide.

Not all rice varieties have been tested with all possible tank mix combinations. If you are not familiar with an Arroz 80 CA tank mix with any of the listed products, or a tank mix with a pesticide product that is not listed in this section, it is your responsibility to test the combination for crop safety on a small portion of your rice crop to ensure that a phytotoxic or other adverse response will not occur. In addition, test the physical compatibility of Arroz 80 CA with tank mix partners before use. In a lidded glass jar (~1 quart size), add all mix partners, in their relative proportions. Invert, shake or mix the jar thoroughly. Observe mixture for approximately 30 minutes (though signs of incompatibility will often be seen within 5 minutes).

# **Tank Mix Restrictions:**

- To avoid injury or antagonism, do not tank mix Arroz 80 CA with pesticide products containing the active ingredients malathion or methyl parathion
- Do not apply Arroz 80 CA within 7 days of treatment with malathion or methyl parathion

#### **USE RESTRICTIONS**

- Do not irrigate other crops with water that has been drained directly from fields treated with Arroz 80 CA.
- Field ends cannot be double-sprayed.
- Apply a maximum 1.06 oz. Arroz 80 CA per acre per year. Do not make application to second crop (stubble/ratoon crop) rice.
- Observe a 3-week application interval for subsequent applications of Arroz 80 CA.
- Do not treat stressed rice or weeds with Arroz 80 CA.
- If fields have been land leveled and have extreme cut and heavy fill areas, Arroz 80 CA cannot be applied to the first rice crop in these fields (this restriction does not pertain to maintenance leveling).
- If commercial crayfish farming is practiced in rice paddies, Arroz 80 CA cannot be applied.

# STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in a cool dry place. Keep pesticide in original container. Keep container closed when not in use. Do not put concentrate or dilute into food or drink containers. Not for use or storage in or around the home. For help with any spill, leak, fire, or exposure involving this material, call day or night 800-424-9300.

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

#### **CONTAINER HANDLING:**

[For outer bag containing water soluble packets]

[Nonrefillable outer bag. Do not reuse or refill the outer bag. Offer for recycling, if available or dispose of outer bag in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.]

[For bulk fiber drum with liner]

[Nonrefillable drum. Do not reuse or refill this container. Offer for recycling, if available, or dispose of drum in a sanitary landfill or by incineration. Liner: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into packaging equipment. Offer for recycling, if available, or dispose of liner in a sanitary landfill or by incineration.]

# LIMITED WARRANTY AND DISCLAIMER

The manufacturer warrants (a) that this product conforms to the chemical description on the label; and (b) that the directions, warnings, and other statements on this label are based upon responsible experts' evaluations of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants and residues on food crops, and upon reports of field experience. Tests have not been made on all varieties of food crops and plants, or in all states or under all conditions. THIS WARRANTY DOES NOT EXTEND TO THE USE OF THIS PRODUCT CONTRARY TO LABEL INSTRUCTIONS, OR UNDER CONDITIONS NOT REASONABLY FORESEEABLE.

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