



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7505P)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

EPA Reg. Number:

66222-294

Date of Issuance:

10/1/21

NOTICE OF PESTICIDE:

Registration
 Reregistration
(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

PROPANIL EC

Name and Address of Registrant (include ZIP Code):

Makhteshim Agan of North America, Inc. (d/b/a ADAMA)
3120 Highwoods Blvd., Suite 100
Raleigh, NC 27604

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.

Signature of Approving Official:

Emily Schmid

Emily Schmid, Product Manager 25
Herbicide Branch, Registration Division (7505P)

Date:

10/1/21

2. Make the following label changes before you release the product for shipment:
 - Revise the EPA Registration Number to read, “EPA Reg. No. 66222-294.”
3. Submit one copy of the revised final printed label for the record before you release the product for shipment.

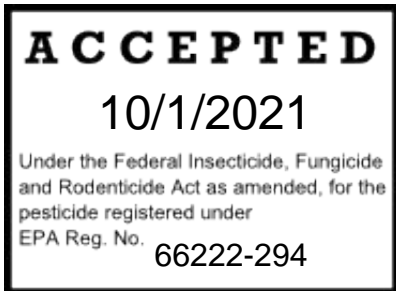
Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements 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 Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 9/17/2020

If you have any questions, please contact Sarah Meadows by phone at 703-347-0505, or via email at meadows.sarah@epa.gov.

Enclosure



PROPANIL	GROUP	7	HERBICIDE
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Propanil EC

Herbicide

Alternate Brand Name: Diverge™ EC

For Postemergence Control of Grass and Broadleaf Weeds in Rice Fields.

ACTIVE INGREDIENT:	% BY WT.
Propanil: 3',4'-Dichloropropionanilide	44.46%
OTHER INGREDIENTS:	<u>55.54%</u>
TOTAL:	100.00%

Contains 4 lbs propanil per gallon
 This product contains the toxic inert ingredient isophorone.

KEEP OUT OF REACH OF CHILDREN

WARNING/AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

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

Manufactured for:
 Makhteshim Agan of North America, Inc. (d/b/a ADAMA)
 3120 Highwoods Blvd., Suite 100
 Raleigh, NC 27604

EPA Reg. No. 66222-x

EPA Est. No. _____

NET CONTENTS: _____

FIRST AID	
IF IN EYES:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15 to 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:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
IF 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 to an unconscious person.
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 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. You may also contact 1-877-250-9291 for emergency medical treatment information.

In case of spills, fire, leaks or accidents call 1-800-535-5053.

Optional Text for Label Booklet: [For additional precautionary, handling and use statements, see inside of this booklet.]

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

WARNING. Causes substantial but temporary eye injury. Causes skin irritation. Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. **DO NOT** get in eyes, on skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

**{This section is for formulations packaged with a built-in probe}
Personal Protective Equipment (PPE)**

Mixers, loaders, applicators, and other handlers must wear the following, except when removing an unrinsed probe:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves made of barrier laminate or butyl rubber >14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear (goggles or face shield)
- Chemical-resistant apron when mixing/loading, cleaning up spills or equipment, or otherwise exposed to concentrate.
- For overhead exposure wear chemical resistant headgear. When cleaning equipment wear a chemical resistant apron.

In addition, handlers must wear chemical-resistant footwear when cleaning up spills or equipment.

Mixers, loaders, and other handlers must wear the following when removing an unrinsed probe:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves made of barrier laminate or butyl rubber >14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear and
- Chemical-resistant apron
- For overhead exposure wear chemical resistant headgear. When cleaning equipment wear a chemical resistant apron.

See **Engineering Controls** for additional requirements.

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them. 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.

{This section is for formulations packaged WITHOUT a built-in probe}

Person Protective Equipment (PPE)

Mixers, loaders, applicators and other handlers must wear the following, except when removing an unrinsed probe:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant footwear plus socks
- **Chemical-resistant gloves made of barrier laminate or butyl rubber >14 mils**
- **Chemical-resistant apron when mixing/loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.**
- **Protective eyewear (goggles or face shield).**
- **For overhead exposure wear chemical resistant headgear. When cleaning equipment wear a chemical resistant apron.**

See **Engineering Controls** for additional requirements.

{The following Engineering Controls will be used if product packaged WITH a built-in probe}

ENGINEERING CONTROLS

Mixers and loaders must use a closed system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)] for dermal protection and must:

- Wear the personal protective equipment required in the PPE section of this label for mixers and loaders.

Human flagging is prohibited. Flagging to support aerial application is limited to use of the Global Positioning System (GPS) or mechanical flaggers. Pilots must use an enclosed cockpit that meets the requirements listed in the WPS for agricultural pesticides [40 CFR 170.24(d)(6)].

{The following Engineering Controls will be used if product packaged WITHOUT a built-in probe}

ENGINEERING CONTROLS

Mixers and loaders must either:

- Use a closed system that meets the requirements listed in the Worker Protection Standard (WPS) for dermal protection of agricultural pesticides [40 CFR 170.240(d)(4)], OR
- Use the probe system described below:

Probe System

Specific requirements for use of the probe closed mixing/loading system:

- Remove plug from bung of drum containing this product only when drum is sitting on the ground or on a secure level platform, with the bung end of the drum pointed up.
- **DO NOT** pour this product from its drum.
- Transfer product from the drum to the mixing tank by use of suction hose connected at one end to the suction pump on the mixing tank and connected at the other end to a probe (dip tube) that is inserted through the bung opening into the drum.
- **DO NOT** handle the probe or bung in a manner that allows dripping or splattering of the product onto yourself or any other person.
- **DO NOT** touch the portion of the probe that has been in contact with this product until after the probe has been triple rinsed with water.
- If all of the product is removed from the drum, then triple rinse the probe while it remains inside the drum.

Unrinsed Probes

- If an un-rinsed probe must be removed from the drum, then use an anti-drip flange, and immediately transfer the probe into a container of rinse water. The anti-drip flange must be designed to remove excess propanil product from the probe as it is extracted from the drum.
- Take the following steps if the probe must be disconnected from the suction hose before both the probe and the hose have been triple rinsed:
 1. Equip the probe end of the hose with a shut off valve
 2. Install a dry break coupling between the valve and the probe
 3. Close the shut-off valve before disconnecting the probe

PPE

In addition, mixers and loaders using all systems must:

- wear the personal protective equipment required in the PPE section of this labeling for mixers and loaders,
- wear protective eyewear, if the system operates under pressure, and
- when using a system that meets the requirements in the WPS as a closed system or using a probe system when the probe is not removed, chemical-resistant footwear must be provided, be immediately available, and be used in an emergency, such as a broken package, spill, or equipment breakdown.

All systems must be capable of removing the pesticide from the shipping container and transferring it into mixing tanks and/or application equipment. At any disconnect point, the system must be equipped with a dry disconnect or dry couple shut-off device that is warranted by the manufacturer to minimize drippage.

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.

ENVIRONMENTAL HAZARDS

For terrestrial uses, do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate. This product is toxic to fish and aquatic invertebrates. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate waste intended for irrigation or domestic purposes. Do not apply when weather conditions favor drift from areas to be treated.

This pesticide is toxic to birds.

Ground Water Advisory

This chemical has properties and characteristics associated with chemicals detected in ground water. The use of this chemical prior to flooding may result in shallow ground water contamination due to cracks in subsoil of the rice paddy.

Propanil and 3,4-DCA (a major propanil degradate) are known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

This product may contaminate water through runoff following rainfall events and by seepage through the levees. This product has a high potential for runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Levees should be constructed with adequate time prior to chemical application so that they are compacted to reduce seepage and to hold 3-6 inch flood.

Non-Target Organism Advisory

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.

ENDANGERED SPECIES PROTECTION

This product may have effects on endangered species. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the county in which you are applying product. To obtain Bulletins, no more than six months before using this product, consult <http://www.epa.gov/espp/> or call 1-844-447-3813. You must use the Bulletin valid for the month in which you will apply the product.

If endangered plant species occur in proximity to the application site, the following mitigation measures are required: Leave an untreated buffer zone of 200 feet. This product must be applied using a low boom (20 inches above the ground) and ASAE fine to medium/coarse nozzles. To determine whether your county has an endangered species, consult the website <http://www.epa.gov/espp/usa-map.htm>.

Endangered Species Bulletins may also be obtained from extension offices or state pesticide agencies. If the bulletin is not available for your specific area, check with the appropriate local state agency to determine if known populations of endangered species occur in the area to be treated.

PHYSICAL OR CHEMICAL HAZARDS

DO NOT mix or allow product to come in contact with oxidizing agents, as Hazardous Chemical reaction may occur.

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 in your State 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 24 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 including plants, soil, or water is:

- Coveralls
- Chemical-resistant gloves made of barrier laminate or butyl rubber > 14 mils
- Chemical-resistant footwear plus socks
- Protective eyewear

PRODUCT INFORMATION

For Postemergence Control of Grass and Broadleaf Weeds in Rice Grown Only in – Arkansas, Florida, Kansas, Louisiana, Mississippi, Missouri, South Carolina, and Texas

Propanil EC is formulated as an emulsifiable concentrate containing 4 lb active ingredient per gallon and is intended for postemergence weed control in rice. Propanil EC is not an hormone-type herbicide but kills susceptible weeds by direct contact action. For this reason, thorough spray coverage of emerged weeds is essential for best results. Propanil EC has no preemergence or residual herbicidal activity in soil. Only weeds that have emerged and exposed at time of application will be controlled.

Apply Propanil EC only to fields that have been drained of floodwater. Propanil EC is most effective if applied when susceptible grasses and broadleaf weeds are small and growing actively under favorable soil moisture and weather conditions. Early weed control removes weed competition from the rice crop, saves moisture, and generally contributes to increased yields.

Read Mixing and Equipment label instructions before application. When tank mixing, always read all individual manufacturer's labels. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements for each product in the tank mixture.

Precaution

- Avoid drift or accidental application from turning aircraft on beans, cotton, soybeans, corn, grain sorghum, organic crops, safflower, seedling legumes, cucurbits, vegetables, orchards, vineyards, gardens, shrubs, and ornamentals. Once applied, Propanil EC does not release fumes hazardous to nearby crops.

Restrictions

- Preharvest Interval (PHI): **DO NOT** apply this product within 60 days of rice harvest.
- Chemigation: **DO NOT** apply this product through any type of irrigation system.
- **DO NOT** apply more than a maximum of 6 quarts of Propanil EC (6 lb active ingredient) per acre in a single application or exceed 8 quarts of Propanil EC (8 lb active ingredient) per acre per season.
- **DO NOT** apply this product (directly or indirectly) to wild rice (*Zizania* spp.)
- Application to fields where catfish farming is practiced and draining water from treated fields into areas where catfish farming is practiced is prohibited for 12 months following treatment.

- **DO NOT** graze treated fields or feed treated forage within 60 days of the last application.
- **DO NOT** apply when weather conditions favor drift from areas to be treated.
- **DO NOT** plant or transplant crops in the treated areas for at least 60 days following an application of this product.
- **DO NOT** rotate treated land to other crops or transplant to crops other than rice for 60 days following treatment of this product.
- **DO NOT** apply in winds above 10 miles per hour.
- **DO NOT apply this product within 14 days before or after carbamate or organophosphate insecticide applications. Otherwise, serious injuries to rice may occur.**
- Water drained from treated rice fields must not be used to irrigate other crops or released within 2 miles upstream of a potable water intake in flowing water (e.g. river, stream, etc.) or within 2 miles of a potable water intake in a standing body of water, such as a lake, pond, or reservoir.

EMERGENCY RELEASE PROVISION

Water holding (discharge) intervals for flood water following propanil application in all states:

For delayed flood (water-seeded) rice grown south of Interstate Highway 10 from the Texas/Louisiana border to Houston and east of State Highway 35 from Houston to Port Lavaca – Flood water must be held for 10 days after application, unless excessive rainfall completely submerges the rice crop and forces premature release. For Texas rice grown in areas north or west of these boundaries, the water holding interval will be 7 days.

For delayed flood (water-seeded) rice in Southern Louisiana south of Highway 14 – Flood water must be held for 15 days after propanil application unless excessive rainfall completely submerges the rice crop and forces premature release. Delayed flood (water-seeded) rice in Louisiana, north of Highway 14 boundary, is subject to the 7-day water holding interval provisions.

For rice grown in California and all other parts of the US not mentioned above – Flood water must be held for 7 days after application, unless excessive rainfall completely submerges the rice crop and forces premature release

MANDATORY SPRAY DRIFT MANAGEMENT

Aerial Applications:

- **DO NOT** release spray at height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplets as indicated in manufacturers' catalogues and in accordance with American Society of Agriculture & Biological Engineers Standard S641 (ASABE 641).
- **DO NOT** apply when wind speeds exceed 15 mph at the application site. If the windspeed 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.
- If the windspeed is 10 miles per hour or less, applicators must use ½ swath displacement upwind at the downwind edge of the field. When the windspeed is between 11-15 miles per hour, applicators must use ¾ swath displacement upwind at the downwind edge of the field.
- **DO NOT** apply during temperature inversions.

Ground Boom Applications:

- User must only apply with the release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to select the nozzle and pressure that deliver medium or coarser droplets as indicated in manufacturers' catalogues and in accordance with American Society of Agriculture & Biological Engineers Standard 572 (ASABE S572).
- **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.

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 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.

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.

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.

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.

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, Propanil EC is a Group 7 herbicide. Any weed population may contain or develop plants naturally resistant to Propanil EC and other Group 7 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance take one or more of the following steps:

- Rotate the use of Propanil EC or other Group 7 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.

- Use a tank mixture 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.
- 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., optimal water management, 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.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. 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.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy, crop or herbicide with a different mode of action, if available.
- Contact your local extension specialist or certified crop advisors for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact ADAMA at adama.com.

WEEDS CONTROLLED

Propanil EC is used for postemergence control of broadleaf and grass weeds in rice fields.

Common Name	Scientific Name
Annual sedge	<i>Cyperus</i> spp.
Barnyardgrass ^a	<i>Echinochloa crus-galli</i>
Breakrush (spearhead)	<i>Rhynchospora corniculata</i>
Broadleaf Signalgrass	<i>Bracharia platyphytia</i>
Crabgrass	<i>Digitaria</i> spp.
Curly dock	<i>Rumex crispus</i>
Foxtail	<i>Setaria</i> spp.
Goosegrass	<i>Eleusine indica</i>
Gulf cockspur	<i>Echinochloa crus-pavonis</i>
Hemp sesbania (coffeebean)	<i>Sesbania herbacea</i>
Hoorahgrass	<i>Fimbristylis miliaceae</i>
Junglerice ^a	<i>Echinochloa colonum</i>
Mexicanweed	<i>Caperonia castanifolia</i>
Paragrass	<i>Urochloa mutica</i>
Redroot Pigweed	<i>Amaranthus retroflexus</i>
Redweed	<i>Melochia corchorifloia</i>
Redstem	<i>Ammannia coccinea</i>
Rice flatsedge	<i>Cyperus iria</i>
Smallflower umbrella sedge	<i>Cyperus difformis</i>
Spikerush (wiregrass)	<i>Eleocharis</i> spp.
Texas panicum	<i>Panicum texanum</i>
Watergrass ^a	<i>Echinochloa</i> spp.
Wooly cotton	<i>Croton</i> spp.

^a In isolated instances, biotypes of barnyardgrass/watergrass may develop that cannot be effectively controlled by propanil alone. Where these biotypes are known or suspected to be present and are found in a mixed weed population in which Propanil EC is effective, tank mix Propanil EC at labeled rate with other rice herbicides that are recommended for control of barnyardgrass/watergrass (up to the 3 leaf stage).

MODE OF ACTION

The principal mode of propanil's herbicidal action against weeds is inhibition of their photosynthesis and CO₂ fixation. Propanil inhibits the electron transport chain reaction and its conversion of CO₂ to carbohydrate precursors. That inhibits further development of the weed. Rice is relatively immune to propanil but most weeds are susceptible to it. The reason for the selectivity is that rice contains a high level of the enzyme aryl acylamidase (AAA), which rapidly metabolizes propanil to nontoxic 3,4-dichloroaniline. However, intensive use of propanil and natural selection have caused some weeds to become resistant to propanil. In 201, resistance to propanil was confirmed in populations of some sedges and ricefield bulrush. These populations were also resistant to several ALS-inhibiting herbicides. However, these weeds are controlled effectively by applications of carfentrazone (Group 14), thiobencarb (Group 8). Avoid using other Group 7 herbicides on propanil resistant weeds.

Timing and Dosage

Early Timing and Rates

Apply Propanil EC when a satisfactory stand of rice has been established that will tolerate flooding. The amount of Propanil EC to apply depends upon the growth stage and condition of the target weeds. Propanil EC is most effective if applied when susceptible grasses and broadleaf weeds are small and actively growing under favorable soil moisture and weather conditions. Use a higher rate in the rate range for heavy weed infestations, weeds in advanced stages of growth, or when growing conditions are less than optimum.

Restriction: Emergency treatments made to weeds in advanced growth stages, such as when grass weeds are tillering, must occur at least 60 days before harvest.

For best results apply Propanil EC at the rate of 3 to 4 quarts (3 to 4 lb active ingredient) per acre when the grasses are actively growing in the 1 to early 4-leaf stage. This rate will also control many seedling broadleaf and aquatic weeds. Generally, this will be 15 to 25 days after planting.

Apply Propanil EC at the rate of 4 to 6 quarts per acre to 4 to 6-leaf or early tillering grasses or when smaller grasses are under stress from dry soil conditions. Generally, this is 20 to 30 days after planting.

Rescue Timing and Rates

Apply Propanil EC at the rate of 5 to 6 quarts (5 to 6 lb active ingredient) in 12 to 15 gallons of spray per acre for emergency control of older tillering grass. Generally, this will be 30 to 40 days after planting. If the field is already flooded, the water should be lowered or drained before spraying to expose more of the grass and weeds. Emergency treatment should be considered as a salvage operation only and cannot be relied upon for total control of grass and weeds.

Application Equipment

Aircraft

Fixed wing aircraft or helicopters should have well-designed spray systems that produce a uniform pattern of medium-fine spray droplets. Apply Propanil EC in no less than 10 gallons of total spray per acre with boom-nozzle sprayers. Increase volume to 12 to 15 gallons per acre for larger or denser stands of grass or during periods of low humidity.

The optimum effective spray swath width depends upon operating conditions and type of aircraft being used. For uniform spray coverage with fixed wing aircraft or helicopter, spray swath width should not exceed the width of wingspan or rotor plus 10%. Measure the swaths accurately for flagging.

Ground Sprayers

Use standard low-pressure herbicide boom sprayers equipped with flat fan nozzles. Use nozzle sizes that deliver a medium-fine droplet in 15 to 20 gallons total spray per acre at 40 to 50 psi and at ground speeds not in excess of 3 to 4 mph. Adjust boom height so nozzle spray patterns meet uniformity. Avoid raising boom too high.

Flush all equipment with clearwater after each day's use. Clean all equipment using the procedure below, before and after spraying other pesticides or other crops.

SPRAYER CLEANUP

Before using equipment exposed to Propanil EC to treat another crop, clean the sprayer and any other equipment (loading hoses, batch tanks, etc.) using the following procedure:

1. Steam-clean tank using a non-chlorine-based detergent, taking care to remove all physical residues.
2. Thoroughly rinse sprayer, tanks, boom, and hoses with clean water (free of sediment and agricultural chemicals).
3. Fill the tank one-half full with clean water and add spray tank cleaner (refer to product label for specific rates). Fill the tank to capacity with clean water. Flush the nozzles, boom, and hoses, and agitate (and recirculate, if possible) the sprayer for 15 minutes. Drain the equipment, taking care to flush the boom and hoses thoroughly.

4. Rinse tanks, hoses and nozzles with clean water to remove spray tank cleaner.
5. Fill the tank one-half full with clean water and add 1 gal. of 21% ammonia or 7 gal. of 3% ammonia per 100 gal. of water. Fill the tank to capacity with clean water. Flush the nozzles, boom, and hoses and agitate (and recirculate, if possible) the sprayer for 15 minutes. Drain the equipment, taking care to flush the boom and hoses thoroughly.
6. Remove nozzles, screens, and strainers, and clean them separately.
7. Rinse tanks, booms, and hoses with clean water.
8. Repeat steps 5 and 7 an additional 3 times.
9. Rinse tanks, booms, and hoses to remove all traces of ammonia.
10. Water rinses may be applied to rice fields. Dispose of bleach rinses at an approved waste disposal facility.

Note: When applying multiple loads of Propanil EC several days in a row, the following procedure must be performed at the end of each day; partially fill the tank with fresh water, flush the boom and hoses, and allow to sit overnight.

Restriction: DO NOT use chlorine bleach with ammonia. All traces of liquid fertilizer containing ammonia, ammonium nitrate or ammonium sulphate must be rinsed from the mixing and application equipment using water before adding chlorine bleach solution. Failure to do so will release a gas with a musty chlorine odor that can cause eye, nose, and throat and lung irritation. **DO NOT** clean equipment in an enclosed area.

Perform cleanup procedures on batch tanks and any other mixing equipment separately from aircraft hoppers. Take care to clean loading hoses and any other equipment or surfaces exposed to Propanil EC.

Crop Tolerance and Growing Conditions

All leading commercial varieties of rice are exceptionally tolerant to Propanil EC. A temporary yellowing or tip burn of rice may be noted after treatment, but new growth is normal.

Precaution: Severe leaf burn and partial killing of rice may occur if the product is applied when rice is under stress and in a weakened growth condition due to disaster or insect infestations, excessive soil salts, overwatering, or prolonged drought and extremely hot weather.

Restriction: DO NOT spray under such conditions and/or when maximum daily temperatures have been or are expected to exceed 100°F.

Effect of Climatic Conditions and Cultural Practices on Weed Control

Field and Seedbed Preparation

Fields should be accurately leveled and contoured and have well-prepared seedbeds free of clods. Such conditions encourage uniform and rapid emergence of rice, grass and broadleaf weeds, allowing more accurate timing and coverage of sprays of Propanil EC for optimum weed control.

Water Management

Before application of Propanil EC, drained or dry planted fields should be flushed as often as necessary to prevent drying and crusting. Flushing encourages uniform emergence and vigorous growth of grass, broadleaf weeds and rice, which is essential for optimum weed control. Flushing fields should occur when weeds and rice are actively growing at time of treatment.

Precautions:

- Make sure the field is drained prior to treatment so that grasses and broadleaf weeds are fully exposed.
- Weeds that are partially submerged in standing water at time of application will not be satisfactorily controlled.

Treated fields should be flooded before a second infestation of grass develops. To prevent additional grass weed seed from germinating, rice fields should be flooded within 24 hours after spraying, or as soon as possible after 24 hours.

Temperature

The temperature a few days before and after applying Propanil EC has an important effect on the weed killing activity. The activity increases as daily maximum temperatures increase above 75°F and decreases as the daily maximum temperatures decline below 75°F.

Restriction: DO NOT apply Propanil EC when maximum temperatures have been or are expected to stay below 65°F or exceed 100°F. Less than optimum temperature at time of application is not critical so long as the temperature exceeds 75°F during the day.

Relative Humidity and Rain

Grasses and weeds are more responsive to Propanil EC during periods of high humidity when the foliage is moist and covered by dew. When the humidity is very low, spray tends to evaporate before reaching weed foliage. For best results under low relative humidity conditions, increase spray volume to 12 to 15 gallons per acre.

Restriction: DO NOT spray if rain is expected within 8 hours of application to avoid loss of deposited spray and herbicide absorption by the weeds.

Wind

Restriction: DO NOT apply when the wind speed exceeds 10 mph to avoid drift hazard to sensitive crops and the possibility of uneven (streaked) applications.

Compatibility with Other Chemicals

Tank mix applications of Propanil EC with other herbicides, insecticides, spray adjuvants or liquid fertilizers may reduce crop tolerance and/or weed control or impair mixing properties. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Adverse Reaction to Insecticides

Precaution: Rice plants may be severely injured or killed if Propanil EC is applied in tank mix combinations or sequentially before or after certain insecticides.

Restrictions:

- **DO NOT** tank mix Propanil EC when carbamate insecticides such as carbaryl, etc., or organophosphorus insecticides (such as malathion and methyl parathion, etc.).
- **DO NOT** apply any of the carbamate or organophosphorus insecticides to rice fields within 14 days before or after applying Propanil EC.
- **DO NOT** apply Propanil EC to rice fields planted with rice seed treated with bird repellents containing methiocarb.

Consult local extension specialist for current recommendations of approved insecticides on rice.

STORAGE AND DISPOSAL

DO NOT contaminate water, foodstuffs, feed, or seed by storage and disposal.

PESTICIDE STORAGE: Open dumping is prohibited. **DO NOT** store this product near fertilizers, seeds, insecticides, or fungicides. Store at temperatures above 32°F. If product is allowed to freeze, warm to 50°F and agitate before using. Containers must not be stacked more than three (3) containers high. Reclose all partially used containers by thoroughly tightening screw cap. Damaged or leaking containers that contain product that cannot be used immediately must be transferred to suitable sound containers and properly marked. Any spilled materials must be thoroughly absorbed with a suitable absorbent, swept up and transferred to a new or waste container for disposal as indicated under "Pesticide Disposal."

For safety and prevention of unauthorized use, all pesticide must be stored in locked facilities. To prevent accidental misuse, different pesticides must be stored in separate areas with enough distance between to provide clear identification.

Opened, partially used pesticides should be stored in original containers when possible. When transfer to another container is necessary because of leakage or damage, carefully mark and identify contents of the new container. Keep containers closed when not in use.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticides or environmental control agency, or the hazardous waste representative at the nearest EPA region office for guidance.

CONTAINER HANDLING

Nonrefillable Container (Equal to or Less than 5 Gallons): Nonrefillable container. **DO NOT** reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake container for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer container for recycling, if available, or puncture and dispose of container in a sanitary landfill, or by other procedures allowed by state and local authorities.

Nonrefillable Container (Greater than 5 Gallons): Nonrefillable container. **DO NOT** reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip the container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer container for recycling, if available, or puncture and dispose of container in a sanitary landfill, or by other procedures allowed by state and local authorities.

LIMITATION OF WARRANTY AND LIABILITY

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

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

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

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