



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

November 1, 2019

Rebecca Clemmer
Regulatory Manager
RiceCo, LLC
630 Freedom Business Center, Suite 402
King of Prussia, PA 19406

Subject: Registration Review Label Mitigation for Bensulfuron
Product Name: Duet Herbicide
EPA Registration Number: 70506-361 (formerly 71085-9)
Application Dates: Dec 11, 2017
Decision Numbers: 556603

Dear Ms. Clemmer:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Bensulfuron Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

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.

A copy of your label stamped "Accepted" is enclosed. Products shipped after 12 months from the date of this amendment must bear the new revised label. Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

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If you have any questions about this letter, please contact Miguel Zavala by phone at 703-347-0504, or via email at zavala.miguel@epa.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Linda Arrington', with a stylized flourish at the end.

Linda Arrington, Branch Chief
Risk Management and Implementation Branch 4
Pesticide Re-Evaluation Division
Office of Pesticide Programs

Enclosure

Propanil	Group	7	Herbicide
Bensulfuron-methyl	Group	2	Herbicide



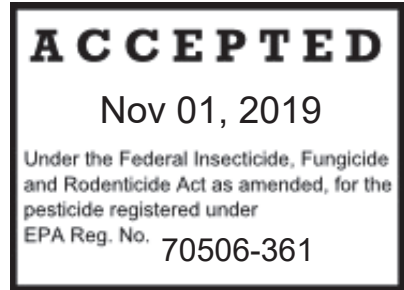
Herbicide

For Postemergence Control of Broadleaf, Grass, and Sedge Weeds in Rice Fields

Suspension Concentrate (SC)

Active Ingredients:

3', 4' – Dichloropropionanilide	41.20%
Methyl 2-[[[(4, 6-dimethoxypyrimidin-2-yl)amino]carbonyl]amino]sulfonyl]methyl]benzoate	0.32%
Other Ingredients:	58.48%
TOTAL	100.00%



This product contains 4 lbs. of 3', 4'-Dichloropropionanilide and 14 grams of Methyl 2-[[[(4, 6-dimethoxypyrimidin-2-yl)amino]carbonyl]amino]sulfonyl]methyl]benzoate per gallon of formulated product.

EPA Registration No. 70506-361
EPA Establishment No.

KEEP OUT OF REACH OF CHILDREN

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

CAUTION	
FIRST AID	
If Swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have the person sip a glass of water, if able to swallow. • DO NOT induce vomiting unless told to do so by a poison control center or doctor. • DO NOT give anything by mouth to an unconscious person.
If on Skin or Clothing:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If in Eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with clean water for 15-20 minutes. • Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If inhaled:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth if possible. • Call a poison control center or doctor for further treatment advice.

<p>AGRICULTURAL CHEMICAL DO NOT SHIP OR STORE WITH FOOD, FEEDS, DRUGS, OR CLOTHING.</p>
<p>FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE, CALL Rocky Mountain Poison and Drug Center: (866) 673-6671 FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC (800) 424-9300</p> <p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>

MANUFACTURED FOR: UPL NA Inc. United Phosphorus, Inc., King of Prussia PA 19406
NET CONTENTS: 30 GALS.

**PRECAUTIONARY STATEMENTS
HAZARDOUS TO HUMANS AND DOMESTIC ANIMALS
CAUTION**

Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin or clothing. Avoid breathing spray mist.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are chemical-resistant gloves, such as polyethylene, nitrile or polyvinyl chloride \geq 14 mils.

Mixers, loaders, applicators and other handlers cleaning up spills or equipment, or otherwise exposed to the concentrate and handlers removing an unrinsed probe must wear the following:

- Long-sleeved shirt,
- Long pants
- Shoes plus socks
- Chemical-resistant gloves and chemical-resistant apron when mixing/loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.

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.

See Engineering Controls for additional requirements.

USER SAFETY RECOMMENDATIONS

Users should:

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

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 labeling for mixers and loaders,
- Wear protective eyewear, if the system operates under pressure, and
- Chemical-resistant footwear and coveralls must be provided and be immediately available for use in an emergency, such as a broken package, spill, or equipment breakdown.

[the following Engineering Controls will be used if product packaged without built in probe.]

Mixers and loaders must either:

- (1) use a closed system that meets the requirements listed in the Worker Protection Standard (WPS) for dermal protection of agricultural pesticides [40 CFR 160.240(d)(4)].

OR

- (2) 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 the product is removed from the drum, then triple rinse the probe while it remains inside the drum.

UN-RINSED 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.

ALL TRANSFER SYSTEMS

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 and handlers,
- 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.

Flaggers: Human flagging is prohibited. Flagging to support aerial application is limited to use of the Global Positioning System (GPS) or mechanical flaggers.

Enclosed Cabs for Aerial Applicators: Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

ENVIRONMENTAL HAZARDS

This product is toxic to fish and aquatic invertebrates. 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. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. **DO NOT** contaminate water intended for irrigation or domestic purposes. **DO NOT** apply when weather conditions favor drift from area to be treated.

IMPORTANT PRECAUTIONS:

Groundwater Label Advisory: Bensulfuron-methyl is 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 Label Advisory: 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 bensulfuron-methyl from runoff water and sediment. Runoff of this product will be greatly reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

DIRECTIONS FOR USE

It is a violation of Federal law to use this production a manner inconsistent with its labeling. **DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

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 area. Protect the forage and habitat of non-target organisms by minimizing spray drift. For further guidance and instructions on how to minimize spray drift, refer to the Spray Drift Management section of this label.

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 and 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, such as plants, soil, or water, is:

- Coveralls
- Chemical resistant gloves such as or made out of any waterproof material.
- Chemical-resistant footwear plus socks
- Protective eyewear

ENVIRONMENTAL CONTROL AND BIOLOGICAL ACTIVITY

MODE OF ACTION

DUET is a combination of Propanil, a Group 7 herbicide that inhibits PSII, and also includes Bensulfuron methyl, a Group 2 herbicide, or ALS herbicide which inhibit acetolactate synthase (ALS). These two modes of action can be used to manage resistance (See Weed Resistance Management section of this label).

Several important factors should be taken into account to achieve a high efficiency of selective weed control with **DUET**. These include uniform application, growth stage, water management and weather conditions. To assure uniform application, mix the prescribed amount of **DUET** with a sufficient volume of water to provide thorough coverage of target area. For aerial applications use approximately 10 gallons of water or for surface (ground) applications 20-30 gallons of water per acre at sufficient spray pressure. Agitate tank mixes thoroughly and continuously. Avoid over and under application.

Growth stage of weeds is very important. Best results for selective weed control are obtained when most grasses have reached the 1 to 3-leaf stage.

A static flood should be placed on treated fields approximately 48 hours following application for optimum weed control results. See 'Application Timing' for additional information concerning flooding.

Proper field preparation is essential to ascertain a relatively clod free and level surface and to obtain uniform flood levels and growth. Fields may be flushed prior to treatment to produce uniform and vigorous grass germination and growth. Drain water from fields prior to applying **DUET**. Higher rates are recommended to

control larger grasses or exposed weeds when rice fields are not completely drained. Inspect rice fields regularly to select the correct application time.

WEATHER CONDITIONS:

Weather conditions must be observed closely. Under cool weather conditions, higher rates are required to achieve satisfactory control. Avoid application if rain threatens within 6 to 8 hours, or if wind velocities are high enough to cause drift and irregular spray patterns (see Spray Drift Management section of this label).

Temperature: Temperatures at and before application affect product activity in controlling target weeds. Applications should be made when daily maximum temperatures are between 75°F and 100°F. Control decreases with temperatures below 75°F and increases with temperatures above 75°F.

Relative Humidity: **DUET** is a contact herbicide; therefore, herbicidal activity is affected by humidity. High humidity and dew aid in weed control by allowing the product to remain in solution longer on the leaf surface. Low humidity decreases plant activity and thus reduces product absorption. During periods of very low humidity, higher spray volumes, 12-15 gallons per acre, should be used when applied aurally.

Wind: Although **DUET** is less susceptible to drift than solvent-based Propanil products, application should be avoided if wind velocity is high enough to cause drift of the application spray off the target site or irregular spray patterns (see Spray Drift Management section of this label).

ADJUVANTS AND APPLICATION AIDS:

When **DUET** is used alone (not in combination with any other postemergent rice herbicide), a low viscosity crop oil concentrate or surfactant may be used to improve wetting of foliage and increase weed control. Use of a crop oil concentrate is recommended when application is made during cool weather conditions or unstable weather conditions that may produce rain. Under adverse weather conditions, the addition of a crop oil concentrate when tank mixing **DUET** and other rice herbicides for application should be considered. Consult product labels for adjuvant recommendations. The use of a suitable crop oil concentrate or surfactant does not significantly increase injury to rice (leaftip burn).

IMPORTANT PRECAUTIONS:

DO NOT apply this product through any type of irrigation system.

DO NOT apply **DUET** within 14 days before or after carbamate or organophosphate insecticide applications. Serious injury to rice may occur.

Applications to fields where commercial catfish or crayfish (crawfish) farming is practiced and draining water from treated fields into areas where catfish or crayfish (crawfish) farming is practiced is prohibited.

DO NOT fish or commercially grow fish, shellfish or crustaceans on treated areas during the 12 months following treatment.

DO NOT plant or transplant crops in the treated area for at least 120 days follow an application of this product.

DO NOT apply more than 6 quarts (6 lbs Propanil + 0.046 lbs Bensulfuron methyl) active ingredients per acre per application. **DO NOT** apply more than 8 quarts (8 lbs Propanil + 0.062 lbs Bensulfuron methyl) active ingredients per acre per season

DO NOT apply this product (directly or indirectly) to any crop except rice but **DO NOT** use on wild rice (*Zizania* spp.).

DO NOT use on lawns, walks, driveways, tennis courts or similar areas.

DO NOT apply when wind conditions will allow drift to adjacent, susceptible crops such as beans, soybeans, cotton, safflower, cucurbits, vegetables, orchards (such as almonds, prunes and grapes) and other sensitive crops.

DO NOT graze treated fields or feed treated forage within 60 days of the last application.

DO NOT apply within 60 days of harvest.

California only:

DO NOT graze treated fields or feed treated forage within 80 days of the last application.

DO NOT apply within 80 days of harvest.

Water drained from treated rice fields must not be used to irrigate other crops or be released within 2 miles of a potable water intake in flowing water (i.e., river, stream, etc.) or within 2 miles of a potable water intake in a standing body of water (i.e., 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 permanent flood (water-seeded) rice 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.

RUNOFF PREVENTION ADVISORY STATEMENT:

To protect the environment, **DO NOT** allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems

WINDBLOWN SOIL PARTICLES ADVISORY

Bensulfuron-methyl has the potential to move off-site due to wind erosion. Soils that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions and low organic matter content. Other factors which can affect the movement of windblown soil include the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, and drainage patterns. Avoid applying Duet if prevailing local conditions may be expected to result in off-site movement.

Understanding the risks associated with the application of **DUET** is essential to aid in preventing off-site injury to desirable vegetation and agricultural crops. The risk of off-site movement both during and after application may be affected by a number of site specific factors such as the nature, texture and stability of the soil, the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, drainage patterns, and other local physical and environmental conditions. A careful evaluation of the potential for off-site movement from the intended application site, including movement of treated soil by wind or water erosion, must be made prior to using **DUET**. This evaluation is particularly critical where desirable vegetation or crops are grown on neighboring land for which the use of **DUET** is not labeled. If prevailing local conditions may be expected to result in off-site movement and cause damage to neighboring desirable vegetation or agricultural crops, **DO NOT** apply **DUET**.

Leave treated soil undisturbed to reduce the potential for **DUET** movement by soil erosion due to wind or water.

Before applying **DUET** the user must read and understand all label directions, precautions and restrictions completely, including these requirements for a site specific evaluation. If you **DO NOT** understand any of the instructions or precautions on the label, or are unable to make a site specific evaluation yourself, consult your local agricultural dealer, cooperative extension service, land managers, professional consultants, or other qualified authorities familiar with the area to be treated. If you still have questions regarding the need for site specific considerations please call your retailer or your representative.

WEED RESISTANCE MANAGEMENT

MODE OF ACTION

DUET is a combination of Propanil, a Group 7 herbicide that inhibits PSII, and also includes Bensulfuron methyl, a Group 2 herbicide, or ALS herbicide which inhibit acetolactate synthase (ALS). These two modes of action can be used to manage resistance.

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field.

Adequate control of these resistant weed bio-types cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action (non-ALS and/or non PSII herbicide).

Use tank mixtures with herbicides from a different group if such use is permitted on rice; 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.

The maximum application rate of this product is 6 quarts of **DUET** (6.0 lbs ai Propanil + 0.046 lb ai Bensulfuron-methyl) per acre per application.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

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

Users should scout the field prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted a suitable period after application to make sure the application was effective and to identify any weeds that were not controlled.

Suspected herbicide-resistant weeds may be identified by these indicators:

- Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds.
- A spreading patch of non-controlled plants of a particular weed species; and
- Surviving plants mixed with controlled individuals of the same species.

Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide recommendations available in your area.

Report any incidence of non-performance of this product against a particular weed species to your retailer or representative. If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production.

SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator and the grower. The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering these factors when making application decisions. **IMPORTANCE OF DROPLET SIZE** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS!** See Wind, Temperature and Humidity, and Temperature Inversions sections of this label. Applications of **DUET** must conform to the conditions set forth in the current CA propanil regulations (3CCR 6462).

SPRAY DRIFT

Ground Boom Applications:

- Apply with nozzle 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 an Extremely Coarse 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 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

Aerial Applications:

- **Do not** release spray at a height greater than 10 ft above the 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 an Extremely Coarse droplet size (ASABE S572.1). For all other applications, applicators are required to use a Medium or Coarser droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the field.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- **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 nozzles: 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 manufacturer's recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. 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. When applying aerially to crops, do not release spray at a height greater than 10 feet above the crop canopy, unless a greater application height is necessary for pilot safety.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. 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 temperatures 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

DO NOT apply when wind conditions will allow drift to sensitive areas. Sensitive areas include, but are not limited to, residential areas, bodies of water, known habitat for threatened or endangered species, and non-target crops.

APPLICATION TIMING

DUET normally requires 8 hours of DIRECT sunlight after application for absorption into target weeds; however, many atmospheric and environmental conditions can affect absorption into the target weeds. It is highly recommended that application of **DUET** be planned so that the applied product remains in contact with the leaf surfaces for at least 48 hours prior to rainfall or flooding. Historically, morning applications of Propanil products, including **DUET**, have produced better results in weed control.

BROADCAST RATE

Apply 3 quarts (3 lbs Propanil and 0.023 lbs Bensulfuron methyl) of **DUET** per acre when most grasses have reached the 1 to 3-leaf stage. Use 4 to 5 quarts of **DUET** (4 to 5 lbs Propanil + 0.031 to 0.039 lbs Bensulfuron methyl) per acre when the grasses are large (4 to 5 leaf stage) or when unseasonably cool weather conditions prevail. Under dry conditions when grass and broadleaf weeds are stressed, in cases where rice fields have not been drained completely or where weeds are large enough, higher rates of product, 4 to 6 quarts (4-6 lbs ai Propanil and 0.031-0.046 lbs ai Bensulfuron methyl) per acre, should be used to achieve control. Barnyardgrass may be controlled up to 30 to 45 days after planting, before rice plants have reached the fully tillered growth stage. **DO NOT** make more than two applications per season. **DO NOT** apply more than a total of 8 quarts **DUET** (8 lbs ai Propanil and 0.06 lbs ai Bensulfuron methyl) per acre per season.

NOTE: **DUET** applied to rice after the 4-leaf stage may cause visible injury under some climatic conditions. Rice plants usually outgrow such injury.

Tank Mix Options: Apply 2 to 4 quarts (depending upon weed size and timing) of **DUET** per acre tank mixed with a postemergent rice application of **Newpath**. An additional application of any propanil formulation can be made prior to flood as long as no single application exceeds 6 lbs. a.i. or a total of 8 lbs a.i. per acre per season.

When **DUET** is applied with **Newpath** follow the **Newpath** label for recommended surfactants.

When tank mixing with another herbicide, refer to the respective label for rates, methods of application, weeds controlled, proper timing, restrictions and precautions. Always use in accordance with the most restrictive label restrictions and precautions making sure no label dosages are exceeded.

WATER MANAGEMENT

For best weed control, establish the permanent flood as soon as possible (within 7 days of application) after the last application of **DUET** herbicide. Loss of permanent flood following applications of **DUET** may result in poor performance due to regrowth of treated plants or reinfestation by newly germinated weeds. Runoff caused by overflow, levee breach, seepage, or introduction of new water soon after treatment may reduce product performance.

IN CALIFORNIA: Use **DUET** only where rice fields are completely drained or a minimal amount of water remains. If a higher water level is desired, relood field after 12 hours and before 7 days after treatment. This will discourage new weed infestations.

WHERE TO USE

DUET[®] is used for postemergence control of broadleaf, grass, and sedge weeds in RICE fields.

DUET can be used on **CLEARFIELD**[®] rice in combination with labeled rates and timings of **Newpath**[®] for postemergence control of problematic weeds (coffeebean, indigo, morningglory, Eclipta, sicklepod*, pigweed, smartweed, and yellow nutsedge).

WEEDS CONTROLLED

COMMON NAME	SCIENTIFIC NAME
Annual arrowhead spp.	<i>Sagittaria</i> spp.
Barnyardgrass (watergrass)	<i>Echinochloa crus-galli</i>
Blunt spikerush	<i>Eleocharis obtuse</i>
Brachiaria (signalgrass)	<i>Brachiaria platyphylla</i>
Cocklebur	<i>Xanthium</i> spp.
Coffeeweed	<i>Sesbania herbacea</i>

Coffeebean	<i>Hemp sesbania</i>
Crabgrass	<i>Digitaria</i> spp.
Croton	<i>Croton</i> spp.
Curly Indigo	<i>Aeschynomene virginica</i>
Dayflower	<i>Commelina communis</i>
Ducksalad	<i>Heteranthera limosa</i>
Eclipta	<i>Eclipta prostrata</i>
Eisen waterhyssop	<i>Bacopa eisenii</i>
False pimpernel	<i>Lindernia</i> spp.
Foxtail	<i>Setaria</i> spp.
Goosegrass	<i>Elusine indica</i>
Gooseweed	<i>Sphenoclea zeylandica</i>
Ground cherry*	<i>Physalis</i> spp.
Gulf cockspur	<i>Echinochloa crus-pavonis</i>
Hemp sesbania	<i>Sesbania exaltata</i>
Mexicanweed	<i>Caperonia castanifolia</i>
Millet (Texas)	<i>Uruchloa texana</i>
Morning –glory	<i>Ipomoea</i>
Mud plantain	<i>Heteranthera reinformis</i>
Paragrass	<i>Urochloa mutica</i>
Pennsylvania smartweed	<i>Polygonum pensylvanicum</i>
Pickerweed	<i>Pontederia cordata</i>
Pigweed	<i>Amaranthus</i> spp.
Purple ammannia	<i>Ammannia coccinea</i>
Redstem	<i>Ammannia auriculata</i>
Rice flatsedge	<i>Cyperus iria</i>
Roughseed bulrush	<i>Scirpus mucronatus</i>
Sicklepod*	<i>Cassid obtusifolius</i>
Smallflower umbrella plant	<i>Cyperus difformis</i>
Sourdock	<i>Rumex crispus</i>
Southern naiad	<i>Naja guadalupensis</i>
Spearhead	<i>Phacelia hastate</i>
Texasweed	<i>Caperonia palustris</i>
Water plantain	<i>Alisma</i> spp.
Waterwort	<i>Elatinaceae</i> spp.
Wiregrass	<i>Eleusine indica</i>
Yellow nutsedge	<i>Cyperus esculentus</i>

(**DUET** will not control Bermudagrass, cattail, Johnsongrass, red rice and sprangletop).

NOTE: Resistant biotypes are known to exist including California arrowhead, purple ammannia, redstem, ricefield bulrush and smallflower umbrella plant. **DUET** may not control these biotypes.

SPRAY MIXTURE PREPARATION

Wet Spray Application

Thoroughly mix **DUET** with clean water (water that is free of sediment and agricultural chemicals) in the spray tank. **DO NOT** use water from paddies. Only approved drift control agents may be used with **DUET**. **DO NOT** use any other additives except as directed by this label.

To ensure uniform mixing and application, agitate the mixture before application. If the mixture is not sprayed immediately after agitation, re-agitate it before application. Always apply **DUET** spray preparations within 24 hours of product mixing, or the product may degrade.

DO NOT store **DUET** in nurse tanks or any other tanks used to store or transport clean water. Install one-way valves (anti-siphoning devices) on lines and hoses of mixing/loading equipment to prevent contamination of nurse tanks or other clean water sources.

Mixing and application equipment exposed to **DUET** cannot be used for anything other than rice applications until it has been cleaned according to the procedures in the Sprayer Cleanup section of this label.

Additional Mixing Instructions (wet spray)

1. Fill the tank 1/4 to 1/3 full of clean water.
2. While agitating, add the required amount of **DUET**.
3. Continue agitation until the **DUET** is fully dispersed, at least 5 minutes.
4. Once the **DUET** is fully dispersed, maintain agitation and continue filling the tank with water. The **DUET** should be thoroughly mixed with water before adding any other material.
5. As the tank is filling, add the required tank mix partner (other labeled rice herbicides, adjuvants, drift control agents, etc.).
6. If the mixture is not continuously agitated, settling may occur. If settling occurs, thoroughly re-agitate before using.
7. Apply **DUET** spray preparations within 24 hours of product mixing, or the product may degrade.
8. If **DUET** and a tank mix partner are to be applied in multiple loads, pre-slurry the **DUET** in clean water prior to adding to the tank. This will prevent the tank mix partner from interfering with the dissolution of the **DUET**.

SPRAYER CLEANUP

Before using equipment exposed to **DUET** 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 nonchlorine-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 Nutrasol⁴ at 32 oz 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.
4. Rinse tanks, hoses and nozzles with clean water to remove 'Nutrasol'.
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 **DUET** 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.

Attention: **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 **DUET**.

STORAGE AND DISPOSAL

PESTICIDE STORAGE: DO NOT contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. **DO NOT** store this product near fertilizers, seeds, insecticides, or fungicides. Containers should not be stacked more than 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 should be transferred to suitable sound containers and properly marked. Any spilled material should 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 pesticides should be stored in locked facilities. To prevent accidental misuse, different pesticides should 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. Wastes resulting from the use of this product may be disposed of at an approved waste disposal facility. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticide or environmental control agency or the hazardous waste representative at the nearest EPA regional office for guidance.

CONTAINER DISPOSAL: Triple rinse (or equivalent), adding rinsate to spray tank. Offer rinsed containers for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

BULK CONTAINER DISPOSAL: When the container is empty, replace the cap and seal all openings that have been opened during use; and return the container to the point of purchase, or to a designated location specified by UPL NA Inc.. This container must only be refilled with this pesticide product. **DO NOT** Reuse the Container for Any Other Purpose. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transporting. **DO NOT** transport if this container is damaged or leaking. If not returned to the point of purchase or to a designated location, triple rinse empty container and offer for recycling. Disposal of this container must be in compliance with state and local regulations.

**IMPORTANT INFORMATION
READ BEFORE USING PRODUCT**

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of UPL NA Inc. or Seller. Handling, storage and use of the product by Buyer or User are beyond the control of UPL NA Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold UPL NA Inc. and Seller harmless for any claims relating to such factors

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