



PROPANIL Rice Herbicide

Propanil herbicide has been an important weed control tool for California rice growers since 1967. In the mid-1990s, off-site movement of the herbicide onto Sacramento Valley prune orchards led to the temporary loss of propanil. Only after strict new use regulations were adopted in 1997 was the product allowed back on the market.

Today, pressure is on propanil again. Concerns are being raised by Regional Water Board regulators that widespread use of the post emergence herbicide has the potential to cause contamination of surface waters bordering rice fields in the Sacramento Valley. While propanil detections in local surface water have been minimal, regulators are closely tracking monitoring results of all waterways in the region. Should propanil detections increase, rice growers could face further use restrictions.

The California rice industry is determined to keep this important herbicide available for rice weed control programs. This effort starts with product stewardship which should be practiced throughout the life cycle of propanil, from storage to application to disposal of containers. Good stewardship provides benefits that extend far beyond protecting surrounding crops and local water quality. It helps preserve the well-deserved reputation that the California rice industry has earned through years of following good management practices.

Stewardship Practices for Protecting Water Quality

PROPANIL

Rice

Herbicide

This publication outlines important management practices to follow when using propanil and is based on product labels and regulations enacted by the California Department of Pesticide Regulation (CA-DPR). Always read and follow product label directions when using propanil or any pesticide.

Recent Label Changes

- Increase to 7-day water holding (discharge) interval
- Additional spray drift management practices (see below)
- Maximum application rate of 6 lbs.a.i./ac.; seasonal maximum of 8 lbs a.i./ac.

As a result of extending the water holding period, EPA made the important determination that propanil has no effect on threatened and endangered aquatic species when used in rice. (USEPA Amendment to Reregistration Eligibility Decision (RED) for Propanil (March 2006) and the Propanil RED (September 2003).

In 1997, the following regulations were adopted by CA-DPR for use of propanil in the following counties: Butte, Colusa, Glenn, Placer and Yuba; Sutter County north of Sankey Road and Yolo County north of Highway 16:

- No emulsifiable concentrate (EC) formulations can be applied by ground or air

- Aerial applications cannot be made within four miles of prune orchards
- No more than 720 acres may be treated by aircraft within each county per day
- Aircraft must have nozzles that produce droplets not less than 600 microns volume median diameter and not more than 10% of the diameter by volume less than 200 microns

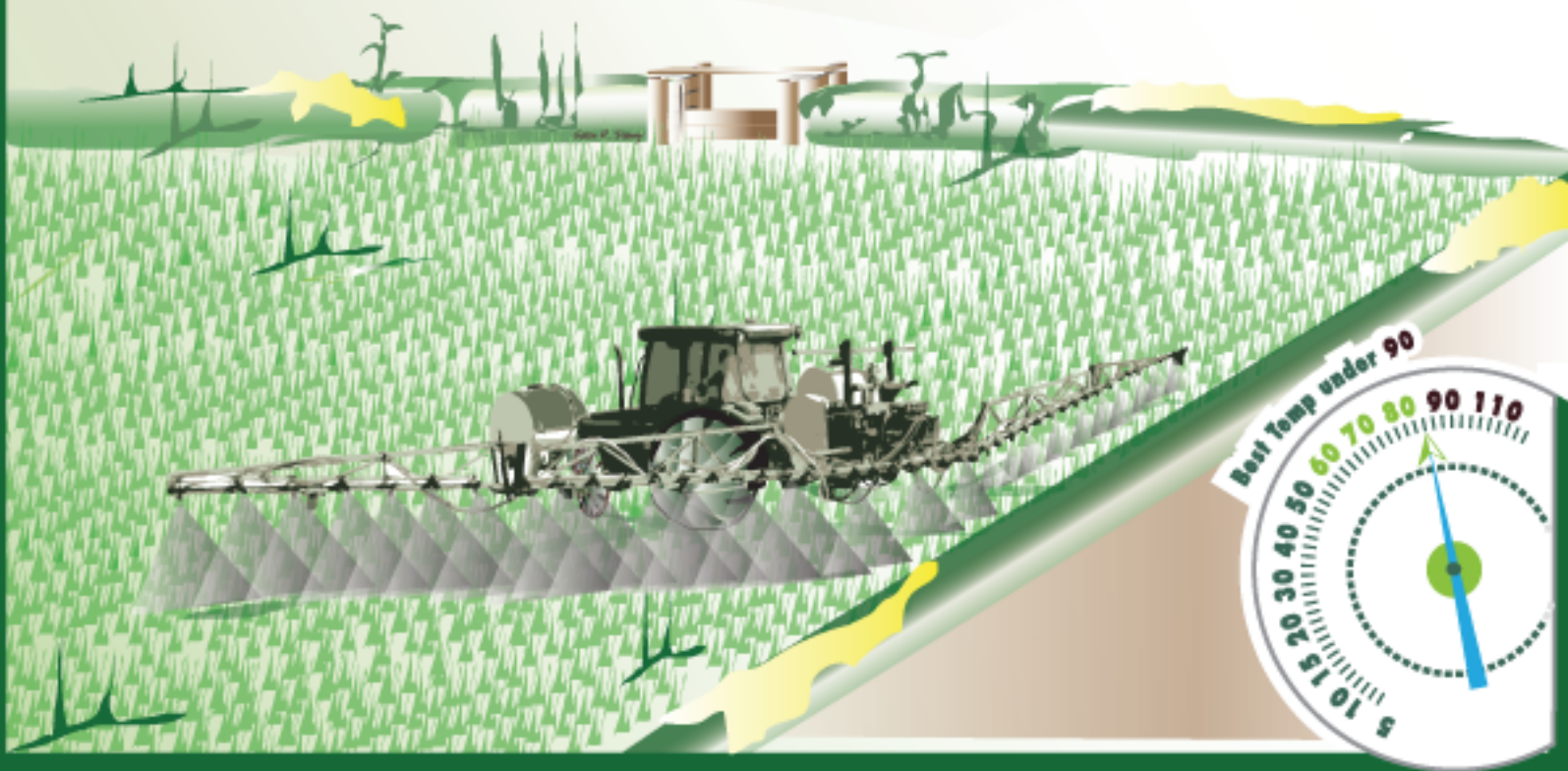
Ground applications cannot be made within one mile of prune orchards, unless the following requirements are met:

- A grower provides the County Agricultural Commissioner (CAC) with a PCA recommendation stating there are no other feasible pest management alternatives
- The grower or applicator monitors and records wind speed and direction during the entire application and keeps the recorded information for one year
- Wind is blowing away from any nearby prune orchards throughout the entire application period

Ground applications can be made within one-half mile of prune orchards if the following requirements are met (in addition to the requirements above).

- The CAC provides onsite monitoring of any application
- The CAC provides notice to and opportunity to comment by any prune orchard owner within one-half mile of the application
- All spray nozzles on ground rigs must produce a droplet size of not less than 500 microns volume median diameter with no more than 10% of droplets less than 200 microns (based on nozzle manufacturer specifications)

NOTE: Several counties in Sacramento Valley have additional regulations on propanil. Before making an application, check with your CAC for any further restrictions.



Applying Propanil by Air or Ground: Always Follow Good Stewardship Practices

Efforts should be made to minimize offsite movement of propanil when making air or ground applications. Be aware that restrictions for either application method vary based on the proximity of the treated rice field to prune orchards. The following are general guidelines for minimizing spray drift.

- Establish appropriate buffers (no-spray zones) between treated areas and waterways
- Do not spray when wind is blowing toward waterways or sensitive crops
- Check the weather forecast before application and be mindful of changing weather conditions during application. Preferred conditions for application of pesticides include:
 - Wind Speed - 3 to 10 mph, no gusty or dead calm conditions
 - Wind Direction - away from water, waterways and sensitive crops
 - Temperature - below 90° F
 - Humidity - above 50% RH
- Calibrate the sprayer often, checking individual nozzle output and pattern
- Always shut off the sprayer when making turns at the end of fields
- Shut off the sprayer near ponds, irrigation ditches and other waterways
- Consider sprayer technologies that reduce drift such as hooded sprayer booms
- Use drip-free shut off valves or screens with check valves
- Choose low pressure or low-drift nozzles (deemed by the manufacturer to be suitable for foliar application) that reduce drift by producing a medium to coarse droplet size spectrum and minimize fine droplets less than 150 microns, as these droplets tend to drift further

Monitor Weather Conditions

- Always monitor weather conditions before, during and after an application
- Do not make applications when wind speed is higher than 10 mph

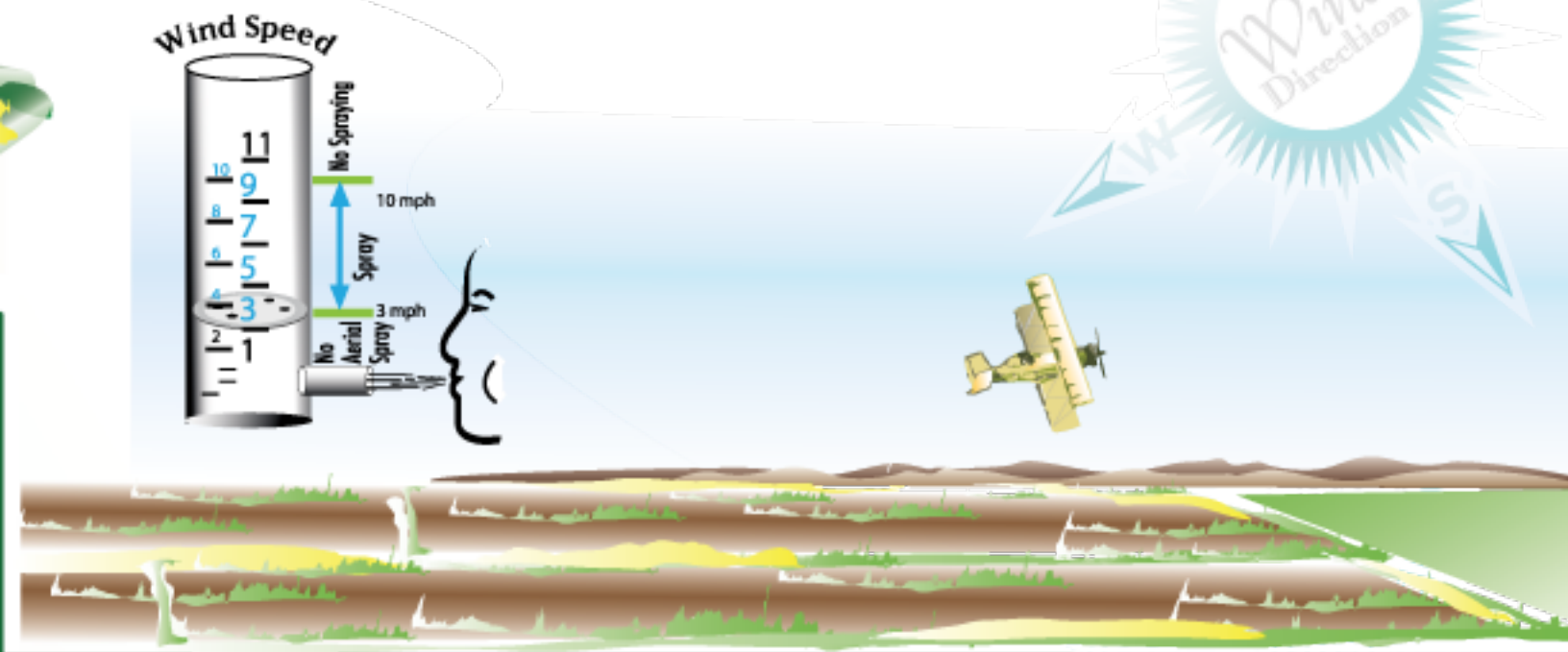
- If wind direction shifts toward sensitive sites such as waterways or neighboring crops, stop or postpone the application
- Do not make any type of application during temperature inversions

Ground Application Techniques

- Height of the spray boom should be no more than 3 feet above the crop canopy, accounting for changes in soil and field conditions
- Ground application speed should not be in excess of 4 mph
- Consider sprayer flow controllers that adjust nozzle output as ground speed varies
- Use nozzles that provide the best coverage at the largest possible droplet size and the recommended droplet size that reduces drift while maintaining efficacy
- Replace any worn nozzles

Air Application Techniques

- The boom width must not exceed 75% of the wingspan or rotor diameter
- Mount the spray boom on the aircraft so as to minimize drift caused by wing tip vortices
- Use upwind swath displacement and apply only when wind speed is 3-10 mph as measured by an anemometer
- Do not release spray at a height greater than 10 feet above the ground or crop canopy
- Use a nozzle type that is designed for the intended application. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and lowest drift
- Release spray at the lowest possible height consistent with weed control and flight safety. Applications more than 10 feet above the crop canopy should be avoided
- To avoid water contamination, turn off spray booms beyond the rice field to avoid spraying over waterways



Before Making an Aerial Application

Growers and the aerial applicators they hire must cooperate when propanil is applied by aircraft. Specifically, growers and applicators should work together to:

- Accurately identify the proper site for application. Use GPS coordinates if the applicator has this capability. Review a sketch of the field, surrounding waterways and location of prune orchards
- Accurately identify and confirm the location of prune orchards and other sensitive crops and waterways near the treatment site
- Check to ensure weather conditions are appropriate for aerial applications by reviewing the 1 to 6 hour forecast prior to initiating treatments
- Never make treatments when conditions are marginal. Doing so can be illegal and can jeopardize the applicator's license as well as the reputation the rice industry has for stewardship

Propanil Stewardship Commitment

To prevent further regulation of propanil on rice or even possible loss of the product, growers and applicators must work together and follow best management practices when applying the product to prevent contamination of waterways and prunes near treated rice fields.

Propanil The Foundation Herbicide For Weed Control In Rice

Commercial Names

Duet® 60 DF	Stam® 80 EDF
Duet® CA	SuperWHAM!® DF
RiceShot® 48 SF	SuperWHAM!® CA
Stam® 4SC	WHAM!® 60 DF
	Ultra Stam® 4SC

How Propanil Gets Into Waterways

The following practices could lead to propanil detections in surface water:

- Overspray from aerial or ground applications
- Early release of water
- Spray equipment with leaky nozzles or malfunctioning shut-off devices
- Failure to follow spray drift guidelines

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