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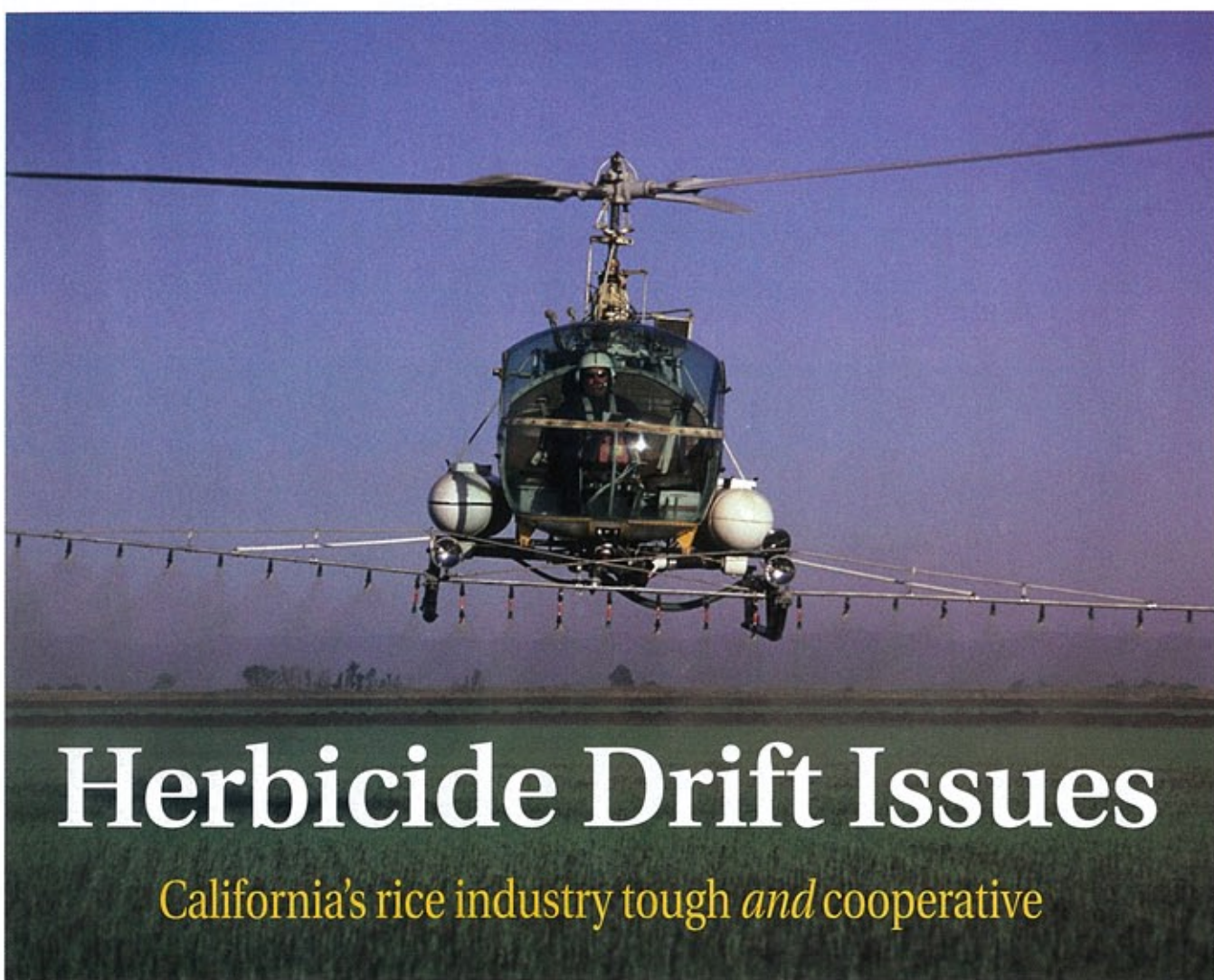
## Herbicide drift issues

California's rice industry  
takes tough stance

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# Herbicide Drift Issues

California's rice industry tough *and* cooperative

PHOTOS BY FRED BEHRMAN

By Brenda Carol

## Tips to minimize drift

- Avoid applying herbicides upwind from crops that could be impacted.
  - Understand the dynamics of tank mix partners. Adjuvants such as stickers can help reduce drift while wetting agents can increase drift.
  - Regularly check and clean nozzles and replace tips when needed.
  - Test/calibrate spray equipment.
  - Use appropriate nozzle size and water pressure. Low pressure nozzles reduce drift.
  - Be aware of inversion layers that can increase drift potential.
- Avoid applications when winds exceed 10 m.p.h.

Herbicide drift issues in California have long been a source of controversy, not only for the encroaching urban population but also within the agricultural industry itself. The state's assorted environmental watchdogs are quick to point out any transgressions – and even some that aren't.

With the bulk of the industry bordering heavily populated areas such as Sacramento and rural areas in the process of being gobbled up by California's housing boom, rice is frequently a target of many assorted environmental agendas. Add water to the mix – within the field as well as surrounding native wetlands, waterways and proximity to the Pacific Ocean – and the recipe for criticism is all too easy to concoct.

"Herbicide drift is even an issue with other growers," says Chris Greer, University of California Cooperative Extension (UCCE) Sutter/Yuba Counties Farm Advisor. "We've had some problems in some areas in the past such as Sutter and Yuba Counties where

applied herbicides drifted onto peaches. That situation led to aerial application restrictions for certain products. There have been other issues as well. We're dealing with an assortment of regulations that have been imposed to address herbicide drift including buffer zones, restrictions based on climatic conditions, restrictions imposed by individual counties and others."

Sorting through the maze of regulations and restrictions requires diligence. "Always read and follow label directions" takes on even greater significance when it comes to wading through what can and can't be done, as well as what should and shouldn't be done. Even the County Ag Commissioner in an individual county can impose restrictions on a countywide or localized area basis.

## Rice industry cooperates

In spite of the red tape associated with addressing herbicide drift issues in rice, the entire industry has worked tirelessly to

address the challenges. In fact, the cooperation among the different registrants, regulatory agencies and industry groups is nothing short of amazing. The California Rice Commission (CRC) administers the Rice Pesticides Program with regulatory oversight from California Department of Pesticide Regulation. CRC has monitoring responsibilities for materials such as thiobencarb and molinate.

"The Rice Pesticide Program has often been singled out as a 'premier' program by the State Water Resources Control Board," says Roberta Firoved, CRC's Industry Affairs Manager. "By working closely with the registrants and the regulatory agencies involved in our industry, each has become a stakeholder in the process. That's helped us work together instead of against each other."

CRC strongly supports stewardship programs on the behalf of registrants, facilitating communications within the industry and often serving as a liaison among the various parties. "Years ago, we temporarily lost propanil because of drift problems on prunes," Firoved says. "The industry started a prune leaf-monitoring program to address the issue. That program is totally supported by the registrants. Now we have the use of that product without drift issues as a result of those efforts."

Valent U.S.A. Corporation, which has several crucial herbicides for the California rice market, is proactively involved in stewardship of its products.

"Our Regiment label has an extensive section on drift mitigation," says Greg Rich, Valent Product Development Manager. "In California, through extensive field and greenhouse research over a number of years, we have established buffer zones that appear on our Regiment CA label. We conducted drift studies before it was even popular, starting in the late '90s."

Those efforts, in addition to intensive monitoring by many registrants, has helped protect the availability of badly needed herbicides for the industry. Dow AgroSciences works closely with County Ag Commissioners to develop air zones in Butte, Colusa, Glenn and Yolo counties for cyhalofopbutyl (Clincher CA herbicide). Considerable research is conducted by the company to determine effects of factors such as wind speed, height above canopy, type of aircraft

(fixed wing versus helicopter), nozzle type, temperature at time of application and tank mix additives. Ongoing air tunnel work in Australia continues to refine research on nozzles, helicopters and crop oil concentrates.

## Efforts to minimize drift

Over the years, extra effort by some companies has resulted in the development of special formulations to minimize drift. Wilbur-Ellis worked with private cooperators, PCA's, university researchers, regulatory agencies and basic manufacturers to label Cerano 5MEG rice herbicide. The product received EPA approval in 2003 for application to water-seeded rice.

The co-development effort was a collaborative effort between Wilbur-Ellis and FMC Corporation, a basic supplier of clomazone,



Different methods of herbicide application are used in California, including this ground rig with 30-inch wheels, above. The floatation tires mean minimal crop damage to rice. In addition to planes, Hiller helicopters, left, are also employed to make applications.

the active ingredient in Cerano. That technology trademarked "DeliveryMark" enabled Wilbur-Ellis to successfully address volatility issues and ultimately help secure registration. Through an extrusion process, Cerano limits volatility, product attrition and off-target movement with its microencapsulated extruded granules (MEG).

To help further mitigate environmental concerns, Wilbur-Ellis stipulated as a condition of registration that growers as well as PCA's be required to participate in training regarding application and product use. Other registrants have similar requirements.

"In regard to Bolero, we cooperate with the CRC, the Regional Water Quality Board (RWQB) and the California Department of Pesticide Regulation (CDPR) to conduct a water monitoring program and hold Bolero

and Abolish grower certification meetings," Rich says. "That information is mandatory for growers to purchase and apply Bolero and Abolish."

"We also supply the County Ag Commissioners with videos of the training so that growers that do not attend the meetings can be certified by going to the County Ag Commissioner's office and viewing the video."

The efforts have been very successful, according to Firoved. "The rice industry experienced another year of excellent thiobencarb (Bolero/Abolish) and molinate (Ordram) monitoring results," she says. "Over the years, our industry has been able to establish credibility with the various regulatory agencies because we all have ownership in the process. Our ability to self-correct when there has been an issue has been one of the key factors in strengthening these types of relationships."

## 'Self-policing' helps

Numerous restrictions still apply to various materials and often differ from county to county. "Regiment CA has aerial application restrictions in Sutter and Yolo Counties," Rich says.

"About 80 percent of the acreage in Sutter County and 70 percent in Yolo County have aerial restrictions. However, that's a 'level playing field' because our competition has the same restrictions. We have been working with the County Ag Commissioners to develop mitigation measures, and we are conducting research in cooperation with Sutter County to safely increase the number of acres on which Regiment can be applied aerially."

Self-policing has helped California's rice industry retain several invaluable herbicides over the years.

"We can provide a tremendous amount of data on pesticide use because it is so extensively monitored," Firoved says. "If there's even the slightest issue, the County Ag Commissioners are very good at communicating with us. That type of cooperative effort has been a tremendous help in our common goals to protect our environment, maintain the viability of the industry and the important tools we need to grow rice." ♡

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