California Department of Pesticide Regulation

getting things done.

2002 Progress Report

STAYING THE COURSE IN CHALLENGING TIMES

This third annual Progress Report from the California Department of Pesticide Regulation takes a slightly different approach from our previous editions. While the report summarizes significant events of 2002, we also wanted to review our work during the past four years. It has been a critical time in DPR's development as a regulatory agency. At the same time, we need to acknowledge some current challenges as we set DPR's course into the future.

Under the Davis Administration, we have matured as a full-fledged, environmental organization. When the California Environmental Protection Agency was created in 1991, one of its most important elements was the establishment of an independent department to regulate pesticides. We have done that and more. Today, DPR is recognized both nationally and internationally for the quality of its work and the expertise of its staff.

During the past three years, we have forged closer and more effective working relationships with our local partners, the County Agricultural Commissioners, as well as our Cal/EPA co-regulators for water, air, and waste management. We also have worked closely with the U.S. Environmental Protection Agency, and our regulatory counterparts in Mexico and Canada, on issues of common interest. These partnerships reflect California's leadership role in agriculture and environmental protection.

As detailed in this report, DPR's accomplishments have spanned a broad range of issues and activities. Our Enforcement Branch completed a five-year assessment of industry compliance with safety regulations, and the Legislature expanded our oversight of local enforcement programs. We launched an integrated pest management program to help schools reduce their use of pesticides, and distributed more than $ 8 million in grants to promote IPM projects on the farm and in urban neighborhoods. We took regulatory actions to impose the nation's toughest restrictions on fumigants, protect the composting industry from pesticide contamination, and restrict the use of a rice herbicide that threatened other crops.

At the same time, we streamlined the process of bringing new, reduced-risk products to market, and introduced time-saving, online services for licensees.

As the state's fiscal situation declined in 2002, we were forced to curtail or suspend many initiatives undertaken during the previous three years. It was a difficult task, but we had already begun scrutinizing our resources. Under a legislative directive, DPR plans to issue a report on long-term funding options early in 2003. The stakes are high. Despite our state's current fiscal problems, California needs a vigorous, effective DPR to protect our environment and promote our economy. Ultimately, our progress will be measured not by what we have done in the past, but what we pledge for the future.

Paul Helliker

Paul Helliker, *Director*

Understanding pesticides

By definition, all pesticides are toxic.
But if used correctly, they help maintain the balance of nature.

Pesticides play a unique role in environmental protection. Contradicting the usual preventive approach, pesticides are toxic by design and deliberately released into nature. This paradox is explained by the fact that pesticides – when used properly – protect people and their environment from pests – animal, plant or microbial – that threaten human health and the balance of nature. Indeed, nature created the first chemical pesticides, produced by some plants and animals to repel their natural enemies. Over time, people have observed, adapted, and improved upon natural pest management.

Like most human endeavors, the beneficial use of pesticides depends upon information and sound judgment. Scientific knowledge of pesticides continually evolves and improves. California has embraced a scientific approach in developing the strictest and most comprehensive pesticide regulation program in the nation.

The California Department of Pesticide Regulation (DPR) is the state's lead authority for pesticides. DPR has received national and international recognition for its work. While all pesticides must legally receive federal approval before use, DPR requires its own review and registration process to meet higher California standards.

Once a pesticide is approved, DPR and the County Agricultural Commissioners enforce the nation's most stringent pesticide laws. Due to the size and diversity of California agriculture, DPR relies on a close working relationship with the commissioners. They serve as local enforcement agents for state pesticide laws and regulations, and they are integrally involved in many DPR programs. For example, the commissioners issue site-specific permits required before many pesticides can be used, and they conduct inspections of pesticide applications.

In addition to supervising these local enforcement programs, DPR monitors pesticides – from the farm field to the grocery shelf – to assure the safety of workers and consumers. As a final step, DPR continuously re-evaluates its programs, emphasizing risk reduction and, whenever possible, less use of pesticides in favor of more natural pest controls.

Protecting people

People's safety comes first.
That encapsulates every law DPR enforces, every program we administer.

In the same way, treating people fairly guides how we conduct every aspect of our business. Fair treatment means that no one group of people, including racial, ethnic, or socioeconomic groups, should be disproportionately impacted by pesticides. Anyone whose health or environment may be affected by pesticides holds a stake in DPR's decisions. We want to make sure that all have an opportunity to participate in the regulatory process. Environmental justice is not just the law, it's how we do our job.

Many of our efforts involve agricultural workers, because people who work with and around pesticides daily face more potential risks than any other group. While DPR recognizes and responds to the needs of diverse populations – from schoolchildren to Native Americans to urban residents – we never lose sight of the fact that workers stand on the front line of pesticide risk. The level of protection we afford them provides a strong indication of how we protect society as a whole.

"In the last couple of years, DPR completed two assessments of our worker protection program, in response to concerns voiced by worker advocacy groups, and our own staff," said Charles Andrews, chief of the Worker Health and Safety Branch. "First, we assessed field posting requirements and found them to be adequate, though we also determined that notification and posting should be a high enforcement priority for the counties.

"More recently, we assessed worker right-to-know provisions and revised outreach materials to make information more understandable to workers," said Andrews. In 2003, DPR plans to introduce a Worker Protection Initiative that will make worker safety information more accessible and our requirements more enforceable.

DPR has also endorsed community-based initiatives that will better protect workers. Some of our County Agricultural Commissioner partners have made notable efforts in this area, working vigorously to improve pesticide use compliance, acknowledging that this increases protections for all our citizens. For example, San Diego County officials took action after noticing a statistical anomaly in pesticide illness reports.

"Most people don't think of San Diego County as farm country, but we have more farms than all but one other county in California, and more small farms than anywhere in the nation," said County Agricultural Commissioner Kathleen Thuner. "In one recent year, we had more than 80,000 agricultural pesticide applications – yet in that same year, we received only 88 reported pesticide illnesses, and only three agricultural cases. Obviously, illnesses were not being reported."

As a result, Thuner founded the Farmworker Health Initiative early in 2000. Originally focused on improving illness reporting to the county health officer, the San Diego initiative has since expanded to encompass a broad range of agricultural worker health issues. "Education is our primary strategy," said Thuner. "We want to educate medical professionals about the symptoms of pesticide exposure, and we want to educate field workers and their families on how to protect themselves. In the process, we've also begun looking to make improvements in access to medical care, better housing, and sanitation."

ADDRESSING HEALTH CONCERNS: DPR and other agencies recently completed an investigation of pesticides and community health in the area of Lompoc, in Santa Barbara County, where data had suggested that respiratory illnesses occurred at higher rates than expected. DPR formed an interagency workgroup that included Lompoc residents. Based on their recommendations, DPR monitored ambient air in and around the town for 31 pesticides and breakdown products. DPR chose high-risk pesticides for monitoring based on their toxicity, volatility, and amount of use. To ensure a thorough study, DPR contracted with the University of California to develop new methods to monitor for more than two dozen pesticides simultaneously. While many pesticides were detected, and some quite frequently, air concentrations were low compared to health screening levels. (DPR uses screening levels to help determine when it may be prudent to evaluate potential health effects of chemical exposure. By itself, a screening level does not indicate the presence or absence of a hazard.) DPR, with other agencies, evaluated the data for potential health risk from individual pesticides as well as cumulative exposure to multiple pesticides, concluding that the potential health risk in the area is low. No further investigation is planned.

PREVENTING PESTICIDE ILLNESS: DPR has a nationally recognized program to investigate, evaluate and track pesticide-related illnesses. All pesticide-related illnesses must be reported to the State. They are investigated by the County Agricultural Commissioners and the investigative reports are analyzed by DPR technical staff. To help county staff improve their investigative techniques and reporting, staff from DPR's Enforcement and Worker Health and Safety Branches evaluated more than 300 investigative reports and conducted training focused on their findings.

In a very comprehensive study completed in 2001, Department scientists compared DPR data to other major sources of health data (hospital records and poison control records) to gauge the completeness of our database and get a clearer picture of the health effects of pesticides in California. We found that DPR's data captures primarily occupational, agricultural cases while hospital and poison control records identified mostly non-occupational cases. We also found that we had better data on incidents in which more than one person was exposed, and had data on every episode in which more than three persons were exposed. DPR has been working on a variety of fronts for several years to improve illness reporting, and to educate farm workers on their right to seek medical attention. However, the recording of residential and intentional exposures continues to be a problem, especially since the State's fiscal crisis prompted a suspension of a DPR contract with the State's Poison Control Center to report pesticide illnesses on behalf of physicians. When resources become available, DPR will pursue funding for a continuing contractual relationship with the Poison Control Centers to share information on pesticide-related illnesses.

PROTECTING TRIBAL RESOURCES: When trees from national forests are removed (due to fires or logging), the U.S. Forest Service prepares the site and replants conifers. Similarly, after timber companies harvest trees on their own land, they also replant. As part of this process, herbicides are used to control plants that compete with the conifers. In recent years, California tribal people who live and gather food, medicinal, ceremonial and basketry plant materials in or near these forests have voiced concerns about herbicide exposure. In response, the U.S. Forest Service and the U.S. Environmental Protection Agency funded a series of studies by DPR to assess the potential exposure of plant gatherers and users to forestry herbicides. Beginning in 1998, surface water was monitored during and after aerial and surface pesticide applications, and plant samples were collected to monitor drift and the dissipation of herbicides on sprayed plants. DPR also completed a pilot study in collaboration with the State Department of Fish and Game and the Yurok Tribal Fishery to determine herbicide residues in fish tissues. Final reports on the studies were completed in 2002.

In one project, DPR formed a workgroup of tribal members, timber company representatives, and staff from DPR and the offices of local County Agricultural Commissioners. Meetings became a forum to discuss a wide range of issues, and concerns were raised about underreporting of illnesses because health care providers who regularly treat Indians may not be familiar with the symptoms of pesticide-related illnesses. To address this, DPR contracted with the University of California at Davis to develop an Internet-based training program for Indian health care providers. Program development was completed and certified for continuing education credits and became available on the University's Web site in 2002.

REDUCING THE IMPACT OF FUMIGANTS: Measured in pounds, fumigants represent about 20 percent of all agricultural pesticides used in California. Before planting crops, farmers use fumigants to control disease, weeds and pests in the soil. Since fumigants are both toxic and gaseous, their offsite movement can pose hazards. In a coordinated effort to assess hazards of fumigants and reduce their environmental impacts, DPR and the Commissioners have implemented the nation's strictest controls on fumigants.

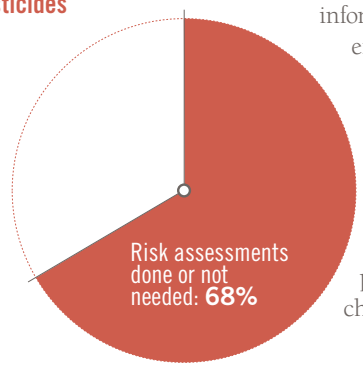
Methyl bromide was the most widely used fumigant and the focus of greatest concern. Regulations that went into effect in early 2001 established minimum buffer zones around fumigations to better protect neighborhoods, schools, and other sensitive areas. Worker protections were also increased. To better evaluate the potential impacts of long-term exposure to methyl bromide, DPR ordered methyl bromide registrants to conduct air monitoring in 2001 and 2002 in areas and seasons of highest use. This complemented monitoring done by the Air Resources Board in 2000 and 2001, at DPR's request. DPR will consider subchronic exposure controls when it promulgates new regulations in 2003 to replace those invalidated in a 2002 court judgment. Meanwhile, the increasing cost of methyl bromide (the result of an impending phaseout in 2005) and DPR's strict controls have combined to reduce use in California to historically low levels.

DPR and the Commissioners are also implementing new controls for the fumigant metam-sodium, calling for stricter oversight, buffer zones, and other measures to prevent drift. DPR also placed chloropicrin into formal reevaluation, which allowed us to require registrants to submit worker exposure studies and air monitoring data needed to complete an in-depth risk evaluation of this fumigant. DPR also conducted air monitoring in 2000 and 2001 for both chloropicrin and for 1,3-dichloropropene to assist in evaluating potential health risks.

AUSPICIOUS TREND: Reported pesticide use dropped by more than 60 million pounds between 1998 and 2001, down to approximately 153 million pounds. (All pesticide use in agriculture must be reported to the State, as well as structural applications by professional applicators. Exempt from reporting are most institutional and all consumer use.) Use of chemicals classified as possible carcinogens, reproductive toxins, and toxic air contaminants all declined, both in pounds applied and acres treated. "There are always a variety of factors that influence pesticide use, but we also know that DPR runs the best pesticide regulatory program in the nation," said DPR Director Paul Helliker. "We've been advocating reduced-risk, reduced-use pest management, and California pesticide users are putting that philosophy to work."

PESTICIDE RISKS WELL-STUDIED: DPR scientists perform risk assessments to answer questions about how toxic a chemical is, what exposure results from its various uses, what is the probability that use will cause harm, and how to characterize that risk. When this information is known, measures can be taken to limit exposures so that harmful effects can be avoided.

Ponds of Pesticides Used in 2001



The completion of dozens of risk assessments in recent years means that for the most hazardous chemicals, risks have been determined and dealt with. In 2001, for example, more than two-thirds of the pounds of pesticides used were chemicals that either had gone through risk assessment or (in the case of oils and sulfur), no risk assessment was needed. Risk assessments have been done on the higher toxicity pesticides (for example, most fumigants), and most remaining high-risk chemicals are now going through the process.

Using the best science

Picking up the pieces is never easy. Making those pieces fit better is really hard. But that's what we did.

"The 'harmonization' program DPR had with U.S. EPA in the early 1990s hadn't worked out," said DPR Director Paul Helliker. "We dusted off the pieces and built a new program. "Harmonizing wasn't very practical, but sharing information and data review is. Now each agency benefits by focusing on its particular area of expertise."

This kind of collaboration avoids duplication, maximizes scarce resources, and "enhances the quality of our science," Helliker said. Now called "worksharing," the rejuvenated project has three elements: concurrent review, joint data review, and tolerance review for "minor crops" (the kinds of fruit, nut and vegetable crops that are the core of California's agricultural economy).

"Even with DPR's budget cuts, we will continue to provide our data evaluations to U.S. EPA," said Helliker of the concurrent review program. This saves U.S. EPA time, and pesticide users benefit because new products get to market faster.

"The same for goes joint data review, in which U.S. EPA, DPR and Health Canada split up the workload of evaluating data for a reduced-risk pesticide," Helliker said.

DPR scientists and technical staff also participate in several U.S. EPA scientific and technical policy development workgroups, Helliker added, "presenting California's perspective so we can work out differences in methodology and philosophy before registration decisions are made."

The most exciting workshare element focuses on tolerance review and has a third partner in IR-4, a U.S. Department of Agriculture program that helps develop and register pesticides for minor crops. IR-4 provides the residue data and DPR does the scientific reviews that U.S. EPA uses to establish the allowable residue levels on fresh produce that makes it safe for human consumption.

Between 1999 and 2001, DPR's data reviews expedited the federal registration of 15 pesticides on 85 California commodities representing more than $6.6 billion to the state's farm economy. What's next on the worksharing agenda? Developing dietary risk evaluations for U.S. EPA to reduce further the time needed to register pesticides.

Helliker concluded, "What I am most proud of is moving worksharing from a management initiative to the scientist-to-scientist level. We are building relationships, credibility and mutual respect that won't easily fade away."

DATA COLLECTION COMPLETE: By 2000, DPR had completed collection of required health effects data on a priority list of 200 pesticides of highest health concern. The mandate to collect data came with the 1984 passage of the Birth Defect Prevention Act. DPR is also completing risk assessments and risk reduction measures on the highest-risk chemicals. Additionally, DPR completed collection of data (required by the Pesticide Contamination Prevention Act of 1985) designed to help predict which pesticides might pollute ground water.

FINE-TUNING PROTECTION: In the only program of its kind in the nation, DPR designs and conducts field studies to more accurately determine worker exposure to pesticides. From 1997 to 2001, DPR scientists collected foliage samples from various crops at the expiration of the restricted entry interval to verify that residues had degraded to the safe levels expected. This helps ensure that workers are not overexposed. (A restricted entry interval is the period that must elapse before workers can re-enter treated fields.) DPR monitored a wide range of crops and chemicals, including several highly toxic organophosphates, various fungicides, and some newer chemicals for which data may be limited.

DPR scientists are pioneers in the development of methods to monitor pesticide exposure, with particular attention to new exposure situations. DPR's risk assessors use the data to more accurately evaluate exposure, and this results in more finely tuned protection for workers and consumers. The studies also help determine if the protective measures on the product label are sufficient, or how they can be improved. For example, the studies can answer questions about what kinds of gloves offer the best protection to rose or strawberry harvesters, and whether the air filtering equipment on closed-cab tractors can effectively filter out pesticide particles.

DPR's staff includes scientists from a number of disciplines, including more than 30 toxicologists and more than 85 environmental scientists, including risk assessors and modelers. Long considered the peer of their colleagues at U.S. EPA, DPR's scientists and technical experts also are on par with their counterparts in Canada and the European Union. Their professionalism and expertise has been recognized with their appointment to many national and international scientific committees, and by publication in peer-reviewed journals.

COMMITTEES

FIFRA Scientific Advisory Panels on aggregate/ cumulative exposure assessments
2003 International Workshop on Applying Probabilistic Methods to Exposure Assessment for Agricultural Workers
Risk Assessment and Methodology Steering Committee, International Life Sciences Institute (ILSI)
Expert Panel on Mode/Mechanism of action information to assess human relevance of animal tumors
Agricultural Reentry Task Force
Joint Regulatory Steering Committee
Outdoor Residential Exposure Task Force
Joint Regulatory Steering Committee
Agricultural Handlers Exposure Task Force
Joint Regulatory Steering Committee
Co-operative Re-evaluation/Re-registration of Heavy Duty Wood Preservatives (e.g., Chromated Copper Arsenate, Creosote) with Health Canada and USEPA
Non-Dietary Exposure Task Force
Joint Regulatory Steering Committee
NIOSH SENSOR Meetings
Drift Task Force
ASAE S525 Review Committee
DAS Vector Control Advisory Committee
Farm Worker Health Initiative Focus Group (S.D.)
Ag Workers Health Collaborative Alliance (SCruz)
EPIC Committee
Editorial Board of Pesticide Science, formerly known as Pest Management Science
International Advisory Board of Pesticide Outlook
Associate Editor, Handbook of Pesticide Toxicology
Associate Editor, Encyclopedia of Agrochemicals
Consultant Roster, AIBS (American Institute of Biological Sciences)
Editorial Board, Society of Environmental Toxicology and Chemistry
Consultant to Science Advisory Board, USEPA

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Better ways to control pests

California schools are scoring higher in pest management. With help from DPR's School IPM Program.

Since the early 1990s, DPR has worked with school districts to make IPM – integrated pest management – the preferred way to manage pests in classrooms, cafeterias, and playgrounds.

"With an emphasis on pest prevention and least-toxic pest control methods, IPM appeals to parents, teachers, and school administrators alike," said David Duncan, chief of DPR's Pest Management and Licensing Branch, which oversees the program. "It's also a good way to educate the public about the basics and benefits of reduced-risk pest management."

School IPM picked up momentum in 2000, when Governor Davis made it part of his Children's Health Initiative and approved specific funding as part of DPR's budget. Later that year, the Legislature passed the Healthy Schools Act (Assembly Bill 2260). It codified DPR's voluntary school IPM program and added new Education Code requirements, including advance notification and posting provisions.

In response to the Healthy Schools Act, DPR staffers have conducted training sessions around the state for school administrators, maintenance supervisors, and others so they could offer IPM instruction to their employees. Despite State Budget cutbacks in 2002, DPR will continue to offer IPM training to interested school districts, though at a slower pace.

DPR also supported a model program for school IPM in cooperation with the Marin County Agricultural Commissioner and the Marin County Office of Education. Supported by $177,000 in DPR Pest Management Alliance grants, the program included a School IPM Expo in 2001. The Expo demonstrations and exhibits attracted more than 200 participants from 19 school districts in 18 counties.

"Our purpose was to provide hands-on, practical information that could be applied in a variety of school settings," said Marin Agricultural Commissioner Stacy Carlsen. "While schools present a very challenging environment for IPM, we were able to demonstrate that low-risk pest management pays off in the long run, and we received many inquiries from school districts that were eager to learn more."

To make school IPM information more accessible statewide, DPR created the School IPM Web site, www.schoolIPM.info. It includes sample letters that can be used to notify parents about prospective pesticide applications, least-toxic pest management alternatives, a 424-page model school IPM guidebook, and other information.

A unique resource is School IPM HELPR, a cooperative project involving DPR and the University of California Statewide Integrated Pest Management Project. Users can look up UC IPM recommendations for managing a specific pest, and then link to a page that summarizes environmental and health information for each management tactic mentioned. Users can view information on toxicology, exposure, available products, and regulatory status in a convenient tabular format.

To encourage pesticide users to adopt pest-fighting techniques that are friendlier to the environment and human health. That's the goal of DPR's IPM Innovator Awards, Pest Management Grants, and Pest Management Alliances.

IPM INNOVATORS: Since 1994, DPR has given out more than 70 IPM Innovator Awards to honor California organizations that emphasize pest prevention, favor least-hazardous pest control, and share their successful strategies with others. (IPM – integrated pest management – works with nature to encourage beneficial plants and animals while making it difficult for pests to survive.) In 2002, these high achievers were named IPM Innovators: the Kern High School District, Self-Insured Schools of California, the City of Santa Cruz, and Clos du Bois Winery.

GRANTS AND ALLIANCES: DPR's Pest Management Grants and Pest Management Alliances are two other key elements in the Department's comprehensive, reduced-risk pest management strategy. The State's fiscal crisis forced a suspension of the Grant programs for 2002-03. Since they were instituted in 1996 and 1998, more than $8 million has gone to 241 projects ranging from small-scale applied research and demonstration to large-scale regional or statewide implementation of multi-disciplinary reduced-risk practices.

AN ALMOND SUCCESS STORY: The Almond Pest Management Alliance, funded since 1998, features orchard sites in Butte, Stanislaus and Kern counties that compare various growing conditions and disease and pest pressures. More than a thousand growers and pest control advisers have attended regional field days to hear researchers review their work and share results.

Pesticide use on almonds has declined from 16 million pounds in 1998 to 10 million pounds in 2001. Particularly encouraging has been the steady decline in acres treated with dormant-season organophosphate (OP) insecticides. Applied during the winter to many orchard crops, residues of these insecticides have caused problems when rainfall washed them into rivers and streams. Although some of this decrease in OP use might be explained by weather and pest pressures, most has occurred because growers decided to use other, mostly reduced-risk, practices. Alternatives include dormant applications of pyrethroids, Bacillus thuringiensis, and oil, and in-season use of these insecticides. However, the most commonly used alternative is simply no dormant insecticide at all. This does not mean growers are doing nothing else to control key insect pests. Innovative farm practices, such as orchard sanitation and conserving beneficial arthropods in farm fields, are effective ways to reduce the use of more hazardous pesticides.

Protecting the environment

The town of Artois rarely attracts a crowd.
But in May 2002, the Glenn County hamlet was the center of attention.

About 50 people gathered for a tour of an environmental project that has gained statewide attention for its comprehensive, innovative approach.

Since 1997, the Glenn County Surface Water Stewardship Committee, under the leadership of County Agricultural Commissioner Ed Romano, has established a model surface water protection program. "The best way to help people understand just how much progress we've made in the field is to show them first-hand," said Romano. "Our field day tours and demonstration projects bring together University of California researchers, environmental advocates, growers, and regulators in a way that gets people excited about our work."

Last May's tour highlighted UC research to measure field runoff, explained how tiny, parasitic wasps can effectively control aphid damage in orchards, and included a demonstration of a "smart sprayer" that senses when to turn itself off.

DPR holds a strong interest in Glenn County's efforts, based on the Department's longstanding environmental monitoring program for agricultural runoff. In 2001, DPR analyzed ten years of monitoring data gathered by the Department and other agencies for chlorpyrifos and diazinon, two widely-used pesticides found in both agricultural and urban settings. While DPR's extensive research found no surface water pesticide levels that posed an immediate human health hazard, the data suggested that aquatic life might face adverse impacts. More than 6,600 water monitoring samples gathered by DPR and other agencies have been posted in DPR's Surface Water Database, available to researchers and the public on CD-ROM.

While the Davis Administration had earmarked more than $3 million to expand DPR's surface water protection initiatives, the State Budget deficit forced the Department to suspend monitoring activities in 2002. However, DPR remains committed to assisting the State Water Resources Control Board and its Regional Boards with data as they impose pesticide "total daily maximum loads" in surface water. As part of this process, DPR will provide technical assistance in reviewing data and offer regulatory solutions to complex problems.

On a related front, DPR made changes in a rice water monitoring program during 2002. An industry coalition now holds greater accountability as part of a longstanding program to keep rice herbicides out of the Sacramento River. DPR and the Sacramento Regional Water Quality Board will work as co-regulators, assessing the program's performance. As the regional water board evaluates the rice industry's progress, DPR stands ready to fine-tune rice herbicide controls if needed.

"With these changes in our surface water policy, DPR moves into a new era of environmental protection," said Director Paul Helliker. "We expect to see more involvement by those who are responsible for pesticides, whenever use of a pesticide poses a concern for the environment.

"At the same time, we will give industry ample opportunities to address these environmental concerns with specific actions and timetables," added Helliker. "If industry efforts prove successful, that will prevent the need for expensive and time-consuming regulatory controls."

CLOPYRALID AND COMPOST: Concerned about residues showing up in compost that could be toxic to plants, DPR in 2002 initiated cancellation action against 15 products containing the herbicide clopyralid, labeled for use on residential lawns. This action prompted clopyralid registrants to ask U.S. EPA for approval to change their product labels to prohibit use on residential lawns as well as many other kinds of turf areas. When grass clippings are sent for recycling into compost, low-level residues sometimes persist which could harm other, beneficial plants. Products used in agriculture (primarily against yellowstar thistle) are not affected since these uses do not contribute significantly to the compost stream.

DPR and the California Integrated Waste Management Board held four meetings to bring together composters, clopyralid users, and others to gain more information on how use of the herbicide may affect compost. DPR and the Board also began formal consultations with U.S. EPA to develop tests to assess the fate of herbicides in the composting environment. Legislation passed in 2002 (AB 2356) also addressed the issue by limiting the sale of any product containing clopyralid to qualified applicators through licensed pest control dealers. By April 2003, DPR must also identify which lawn and turf uses are likely to cause residue problems in compost and impose restrictions or cancel those uses.

A BETTER WAY TO PROTECT GROUND WATER: DPR's goal is to eliminate the pollution of ground water by pesticides. Working with monitoring data collected over more than a decade, DPR scientists developed a method to profile the geographic characteristics of areas vulnerable to ground water contamination by pesticides. Vulnerable areas have been delineated based on soil type and estimates of depth to ground water. A unique aspect of the program is that different routes to ground water have been discovered and have been related to the soil characteristics of vulnerable areas. In 2003, DPR will propose regulations that will replace the current scattered groupings of pesticide management zones, where use of certain pesticides is prohibited or restricted, with broader geographical areas called ground water protection areas. Growers will be allowed to use pesticides in vulnerable areas but must employ specific use practices designed to prevent contamination of ground water.

Enforcement in the field

A law has little impact unless people consistently comply. So some must go on the "dawn patrol."

That's what the San Joaquin County Agricultural Commissioner calls his staff's early morning visits to farms. In Sutter County, inspectors study computerized field maps to help confirm whether farm pesticides are used.

California has stricter rules governing sale and use of pesticides than any state in the nation. Our County Agricultural Commissioners – the nation's largest group of local pesticide enforcement officers – oversee enforcement in 58 counties. While this regulatory system has served California for many decades, there was never any way to document its effectiveness – until now. In 2001, DPR completed a five-year Compliance Assessment Report that monitored industry observance of pesticide rules and regulations.

"The report required a tremendous commitment of Department resources and lengthy research because it included 21 key agricultural counties," said Enforcement Branch Chief Scott Paulsen (himself a former agricultural commissioner). "But we knew it was important to look at each county's individual situation, because each county has unique compliance issues, based on individual crops, industry practices, and other factors.

"We recognized that these county assessments were only 'snapshots in time' and didn't represent the overall quality of local enforcement," Paulsen continued. "Our goal was to help Commissioners focus their activities more efficiently and effectively."

Several counties already are using compliance assessment information to fine-tune their enforcement activities. "We put more emphasis on what we call 'dawn patrol' because, frankly, a lot of farm work is done in the early-morning hours, so that's when we need to be there," said San Joaquin County Agricultural Commissioner Scott Hudson.

Added Sutter County Agricultural Commissioner Mark Quisenberry, "I welcomed the audits because we all tend to get into a routine with the way we do business. This compliance information can be a real eye-opener."

Quisenberry and his staff were working with GIS (geographic information system) maps to track grower activities. Now they're using the GIS data to help on compliance. For example, inspectors review GIS data to identify plots of land for which no agricultural permits have been issued. Then they visit the site to confirm that there has been no agricultural activity.

In San Joaquin County, Hudson and his staff have implemented their own "mini-compliance assessment program," which has helped speed up formal actions when a health or safety violation is detected. Hudson said he's also putting more emphasis on communication. "We hold meetings with the local Farm Bureau and other groups to discuss compliance data, and we're also providing checklists and other materials, like worker health and safety handouts, to help them."

In 2002, DPR began a series of follow-up audits in the counties audited early on. Meanwhile, the Department's compliance oversight authority was clarified and strengthened by the Legislature. Despite fiscal restraints, DPR's emphasis on compliance and enforcement will continue.

ENCOURAGING COMPLIANCE: Helping pesticide users know the rules is the focus of outreach material produced by DPR's Enforcement Branch, under a grant from the U.S. Environmental Protection Agency, Region 9. Two handouts focusing on "Pesticide Safety – It's the Law" were distributed in 2002 by County Agricultural Commissioners to thousands of restricted material permit holders. (These permits are required before buying or using many agricultural chemicals.) A second series of eight pocket-sized leaflets are being distributed by Commissioners and DPR field staff. The leaflets provide information to employers and employees on worker safety regulations, safety training, protective equipment, and emergency medical care. DPR staff also worked with the University of California and licensees to develop new study guides and examination materials for licensee candidates, including a new manual on integrated pest management and a completely updated laws and regulations study guide. Both are posted online.

FOCUS ON FARM WORKERS: Since 1999, DPR managers and technical experts have met regularly with public-interest and farm labor groups, County Agricultural Commissioners, state and local public health officials, migrant health clinic directors, and agricultural production representatives to get input on ways to enhance worker safety. To follow up on the information we gathered, the Department conducted formal studies of field posting (one of the ways workers are informed that pesticides have been applied to a field), notification requirements in general, and the hazard communication rules (which require workers to be informed about the hazards of working with pesticides and the symptoms of illness). As a result, DPR directed the Commissioners to make compliance with these requirements a priority, and to take strong enforcement action against violators. We are also revising rules and regulations to put a system in place that ensures the right information gets to workers when and where they need it.

BORDER PROJECT: An April 2002 workshop co-hosted by the departments of agriculture of both California and Baja California Norte in Ensenada, Mexico, was the forum for DPR staff and Mexican growers to discuss illegal pesticide residues found by DPR on produce grown in Mexico. DPR also provided instruction about pesticide use practices to avoid illegal residues on crops. One goal of this project is to reduce the number of Mexican produce shipments containing illegal pesticide residues. DPR also received a U.S. EPA grant to update the Pesticide Episode Response Plan that sets out how California and Mexican agencies respond to pesticide-related incidents in the border area. Mock episode exercises will also be conducted.

Doing business better

Cooperation. Efficiency.
Getting things done.

Not words often associated with government work. They are now, at DPR.

"Our vision is to make our information simply and easily accessible, our decisions clear and understandable, and our service streamlined and convenient," said DPR Chief Deputy Director Paul Gosselin. "Reducing paperwork translates to lower costs, so more of our scarce resources are spent on delivery of services. That means we can improve services to all segments of the population, whether they use the Internet or not.

"In short, we want to be well-known for being efficient – and accountable," Gosselin said.

California is a unique environment for pesticides, Gosselin said, "so there are things we need to do our way. No other state has our mix of more than 300 fruit, vegetable and nut crops, grown in dozens of different microclimates, with lots of workers in the fields, and cities close to farms."

And no one has the same statutory mandates to collect and analyze pesticide data and strictly control pesticide use. "The challenge is to do our job both effectively and efficiently," said Gosselin. "We've been doing a great job of ensuring the safe use of pesticides for some time. Now we're catching up in the efficiency department.

"Just one example is our worksharing partnership with U.S. EPA, which allows each agency to focus on what each does best," said Gosselin. (See story on this project, page 6.)

More data and better information technology have dramatically increased opportunities to improve government processes and access to information, Gosselin said. Staff access to the Department's product, chemistry, pesticide use, residue, and other databases via DPR's Intranet has resulted in significant increases in productivity.

Working toward providing all Californians with this kind of access to information, DPR has enhanced its Web site, placing several major databases online, including those on pesticide use, residues in surface water, and in fresh produce. Query-based access is next, with the pesticide use data the first to be available in user-customized formats, in 2003.

"We have created a centralized system to track enforcement actions taken at the county level," Gosselin said. DPR staff use the online database to review the compliance history of licensees before approving or renewing a State pesticide license, and information on fines is available on DPR's Web site.

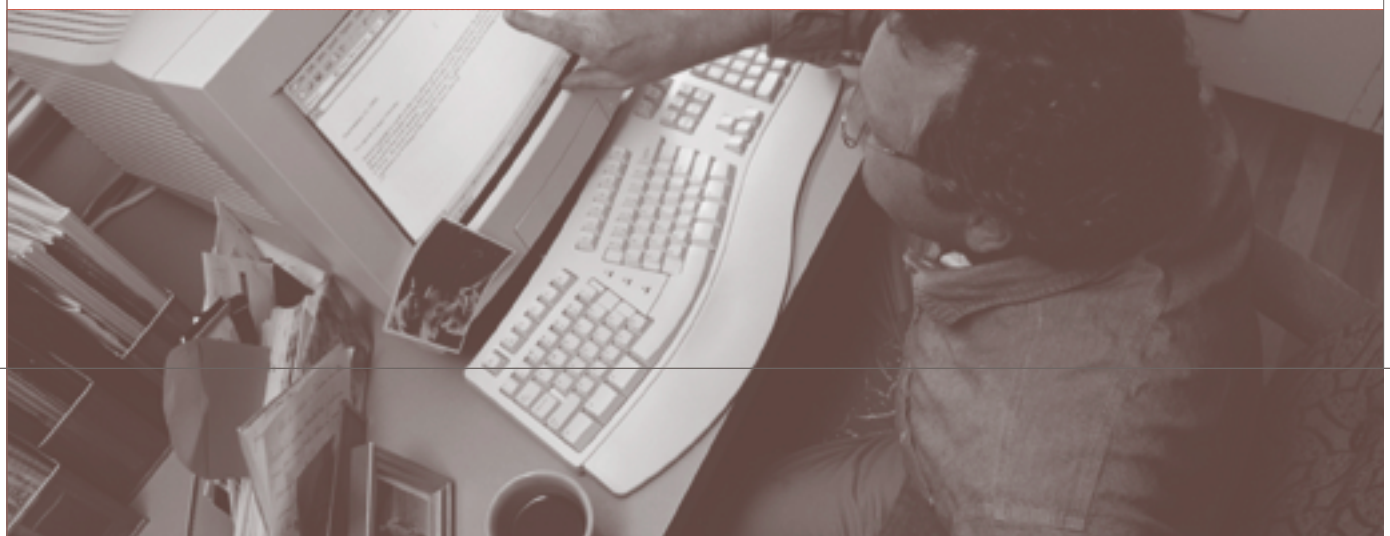
"We are also taking the first step toward establishing concrete measures of our success," Gosselin said, "by participating in the State's EPIC project." EPIC – Environmental Protection Indicators for California – is a collaborative project of Cal/EPA, the Resources Agency, and the Department of Health Services. Key to its success is developing specific and meaningful measurements that track California's environmental conditions over time.

Several business process reengineering projects have also improved DPR efficiency and service. In 2000, DPR asked a consulting firm to analyze its business practices and recommend ways to improve them using cost-effective and accessible information technology. By mid-2002, DPR had completed dozens of "quick-return" operational improvements and others are scheduled to be completed by mid-2003. The consultant's report (available on DPR's Web site) also details a number of major initiatives that will be studied for implementation as funding and resources become available.

The process of evaluating and registering pesticide products – a particularly complex function, involving interaction of several DPR branches and thousands of stakeholders – is a natural for reengineering. From 1997 through 2000, DPR's Registration Branch used information technology to streamline product licensing and renewal, document intake, the chemical information system, data index, and data circulation system. In 1999, a Web-based tracking system was developed and installed on DPR's Intranet for the 6,000-plus pesticide registration actions handled yearly. In 2003, the Registration Branch will launch a program to automatically notify registrants of the review status of their applications for registration. New transactions will automatically trigger e-mail messages to applicants detailing the status of submissions.

Working to eliminate bureaucratic requirements that were unnecessary to protect health and the environment, DPR in 1999 began waiving the submission of some human health effects data and all data on fish and wildlife effects for certain low-risk pheromone products. The following year, DPR adopted regulations exempting certain kinds of minimum-risk pesticides from registration requirements, paralleling an earlier U.S. EPA action.

In 2000, DPR put its Registration Desk Manual online to assist applicants and others in understanding California's pesticide registration process. The same year, DPR formed a Business Process Workgroup with key registrants – the people who bring pesticides to market in California – to exchange ideas for using information technology to improve how DPR conducts business.



TIMELY RELEASE OF REPORTS: In 1999, DPR made a commitment to stakeholders and followed up by successfully concentrating its efforts toward timely release of pesticide data and reports, including the annual summary of use report data, pesticide illness surveillance report, and the pesticide residue monitoring data summary. These data and reports are critical to many projects and programs pursued by universities, public interest groups, registrants, and production agriculture.

HOW-TO SEMINAR IN OCTOBER 2002: 75 representatives of pesticide companies attended a DPR workshop designed to give them practical how-to information about registering sanitizers, disinfectants, and other antimicrobial products. Speakers discussed details of the registration process, scientific data requirements, use enforcement, and illness reporting requirements. This is the first of what DPR hopes is a series of periodic workshops to help companies better understand California's regulatory program.

COLLECTING THE MILL FEE: In 1999, DPR formed an internal task force to address concerns about illegal Internet and mail-order pesticide sales. Legislation clarified DPR's authority over Internet pesticide sales and in 2003, the Department plans to establish a new branch responsible for all mill assessment activities. Effective and efficient collection of this fee – which funds the greater portion of the pesticide program – was hampered with functions spread across several branches. The new unit brings together mill assessment collection and disbursement, auditing, and field investigations of unregistered sales, and for the first time, will conduct statistical analysis of mill revenues to improve overall budgeting processes.

SERVICES FOR LICENSEES: In November 2001, DPR and the State's Enterprise Business Office launched a pilot project for online county registration of pest control licensees, beginning in six counties and expanded to 13 in February 2002. Licensed pilots, pest control businesses and agricultural pest control advisers must register annually with the agricultural commissioner in each county where they do business. Being able to initiate this electronically enhances the quality, timeliness and efficiency of the process. Pest control businesses, pilots, and advisers in other counties – about 5,000 in all – can also use the system to access information about their own licenses. Agricultural commissioners can check license status, review enforcement histories, and conduct an online dialogue with applicants to expedite the registration process.

DPR is also working with the e-Business Office on "i-License," an online license renewal system. Once it is operational (budget constraints will slow the process), it will allow licensees to view and update contact information; check license and certificate renewal status; update continuing education hours; and calculate and pay fees. DPR's goal is to reduce the time for preparation, submission, and processing of renewal applications for approximately 26,400 licensees. (DPR licenses and certifies individuals and businesses that apply, sell, or recommend pesticides in California.)

CREDITS

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DPR balance sheet

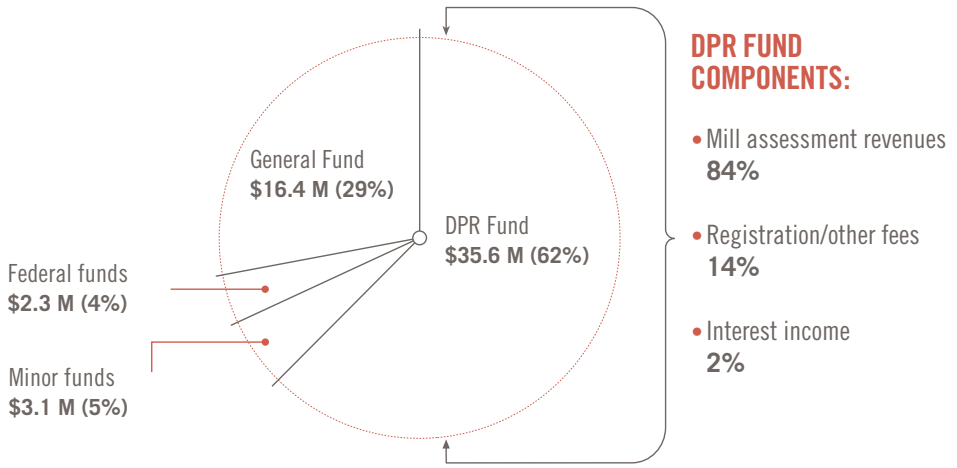
Pesticide Regulatory Program Funding

In 2001-02, the Department of Pesticide Regulation (DPR) expended $57 million and employed approximately 371 employees. DPR receives support from the General Fund, federal funds, various reimbursements, and the DPR Fund. The DPR Fund has three primary sources: annual certificates of product registration, pesticide-related business licenses, and a mill assessment collected on pesticide sales.

In 2001-02, the mill rate was 17.5 mills, or 1.75 cents per dollar of pesticide sales. (One mill is equivalent to $^{1}/_{10}$th of one cent.) An additional, three-fourths mill is assessed on agricultural products for pesticide consultation activities of the California Department of Food and Agriculture. (Collection of this additional, three-fourths mill fee was suspended by Governor Davis for calendar year 2002.)

Additional funds from the U.S. Environmental Protection Agency, U.S. Food and Drug Administration, and the U.S. Department of Agriculture support DPR activities performed with or on behalf of these federal agencies.

DPR FUNDING 2001-02



DPR ORGANIZATION AND FUNCTIONS

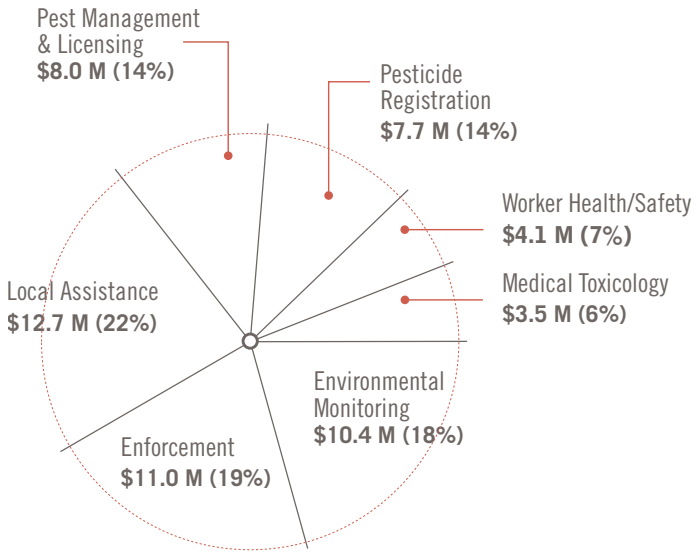
A pesticide must be registered (licensed) with DPR before it can be used, possessed, or offered for sale in California. The **Registration Branch** coordinates the required evaluation process for registration decisions. Branch scientists share data review responsibilities with staff scientists in other branches. The Branch oversees call-ins of data, and maintains product label files and the pesticide data library.

DPR requires a registrant to submit data on a product's potential health effects. The **Medical Toxicology Branch** reviews toxicology studies and prepares risk assessments, scientific estimates of the likelihood that an adverse health effect will result from exposure to a particular amount (dose) of a pesticide or pesticides.

The **Worker Health and Safety Branch** characterizes human exposure, assesses safety, designs and conducts field studies to better evaluate exposure to pesticides, and develops risk reduction mechanisms when needed. Branch scientists analyze county investigations of pesticide-related illnesses and investigate unsafe conditions in workplaces where pesticides are used.

The **Enforcement Branch** enforces pesticide laws and regulations, administers the nation's largest state produce residue monitoring program and conducts outreach and compliance activities. Field enforcement activities are largely carried out by county agricultural commissioners and their staffs (approximately 400 biologists). Enforcement Branch staff provide training, coordination, supervision, and technical support. (DPR supports local activities with specified funds, including six mills from the DPR Fund. See "Local Assistance" in the pie chart below.)

The **Environmental Monitoring Branch** monitors the environment to determine the fate of pesticides, protecting the public and the environment from pesticide contamination through analyzing hazards and developing pollution prevention strategies.

The **Pest Management and Licensing Branch** evaluates pesticide and pest management problems and provides information and grants to develop new strategies that reduce adverse environmental impacts and hazards from pesticide use; oversees licensing and certification of dealers, pesticide brokers, agricultural pest control advisers, pest control businesses, and applicators; manages the Endangered Species Program; and collects, reviews, corrects, and analyzes pesticide use reporting data.

DPR EXPENDITURES 2001-02