

CALIFORNIA DEPARTMENT OF
PESTICIDE REGULATION

A RECORD OF ACHIEVEMENT 2010-2011 PROGRESS REPORT



Perspectives from Our Executive Team

Mary-Ann Warmerdam
Director

The balancing act between pest control and a healthy environment will best be achieved in California and elsewhere through integrated pest management (IPM), a combination of natural and preventive strategies and pesticides less toxic and more target-specific than older, more general chemical treatments. In 2008, Governor Schwarzenegger reinstated DPR's highly successful grants program that promotes – in a very tangible way – the adoption of least-toxic pest management in agricultural and urban settings. With the encouragement of our grants and other innovative programs, we are confident that California will remain the nation's IPM leader.

Chris Reardon
Chief Deputy Director

I'm very pleased to have worked successfully with the Legislature and a broad group of stakeholders over the years to streamline our registration process, improve our product compliance, prevent pesticide drift, provide IPM to daycare centers and have a more consistent budget process.

Mitch Gorsen, Deputy Director
Legislation and Policy

As the newest member of DPR's executive team, I have been most impressed by our staff's understanding that health and the environment can be protected without disrupting the economic vitality of the state's pesticide users, whether they are in agriculture, business or the home. DPR staff pair their knowledge of local agricultural conditions with a deep commitment to ensuring that pesticides are used safely without harm to people or the environment.

Chuck Andrews
Associate Director
Pesticide Programs Division

I want to recognize staff's commitment and dedication to establish the first national pesticide program for volatile organic compounds to improve air quality, reestablish the Alliance Grants program to encourage pest management alternatives, and enhance our enforcement program to protect workers and the environment. Add to that the exceptional work of our enforcement partners, the county agricultural commissioners, who ensure compliance in the field. Together, this has made California's program one of the best in the world.

Marylou Verder-Carlos
Assistant Director/Science Advisor
Pesticide Programs Division

To ensure public health and safety from pesticide exposure, DPR scientists rigorously evaluate data from all available sources. I am most proud of the work our scientific staff have done in evaluating data prior to registration, completing risk assessments and their continuous efforts to evaluate human health and environmental data to ensure that pesticides already available in the market do not cause adverse health effects.

JoAnne Payan, Assistant Director/
Chief Information Officer
Administrative Services Division

I am proud of assembling a talented team of administrative professionals that have brought many successes to DPR. Our functional-based cost accounting enables stakeholders to see DPR's costs of doing business in clear and concise terms. Our science-based civil service classifications allow us to attract and retain talented staff. And DPR's ability to plan for, invest in, and execute information technology operations and projects for the entire department has paid huge dividends in achieving our business objectives at the state and local levels.



OUR EXECUTIVE TEAM

From left to right: JoAnne Payan, Chuck Andrews, Mary-Ann Warmerdam, Chris Reardon, Marylou Verder-Carlos, Mitch Gorsen.

Record of Achievement

California is recognized on the international stage as a leader in protecting public health, worker safety, and the environment. Reducing emissions that contribute to poor air quality will be a highlight of Governor Schwarzenegger's legacy.

The Department of Pesticide Regulation (DPR) has played a small but significant role in improving the quality of the air we breathe by restricting volatile organic compound (VOC) emissions from pesticides. VOCs, which combine with nitrogen oxides in sunlight to form ozone, contribute to smog.

We are the first state in the nation to tackle pesticide emissions. The significant drop in VOC pesticide emissions in 2008, the first year our restrictions were in place, represents one of DPR's many successes in the past six years that you will read about in the following pages.

Other accomplishments include:

- Expanded efforts to educate fieldworkers about pesticide safety and what to do if they are exposed and become ill.
- Streamlined product registration thanks to the passage of Assembly Bill 1011.
- Strived for consistent, fair enforcement of pesticide laws in California's 58 counties.
- Laid the foundation to further protect water quality, including a proposal to reduce drift, irrigation, and storm water runoff.
- Transferred of the Structural Pest Control Board to DPR from the Department of Consumer Affairs as part of the Governor's directive to consolidate and streamline state government.

None of this would have been possible if we did not have robust administrative services. This backbone is often taken for granted, but without it, achievements like ours would have been difficult indeed. For example, we are notable among state agencies for the transparency of our accounting and operational planning. We centralized information technology functions that had been managed among our branches. Among other things, this made possible the launching our Web-based California Pesticide Illness Query, or CalPIQ. This first-in-the-nation achievement enables users to analyze our extensive illness and injury data associated with pesticide exposure.

Another acknowledgment of California's leadership is the U.S. Environmental Protection Agency's strengthening of conditions under which fumigants can be applied based on our restrictions, the toughest in the nation. The stronger federal rules will take effect in phases beginning in January 2011.

DPR's scientists and other staff do an exemplary job of evaluating pesticide products proposed for registration in California and monitoring products already in use. Their work is on par with their peers at the U.S. Environmental Protection Agency and Health Canada, agencies with which we collaborate often. Our partnership with the county agricultural commissioners, who enforce pesticide laws locally, is critical to ensuring protection of health and the environment where pesticides are used.



Mary-Ann Warmerdam
DPR Director

Targeting Smog-Producing Emissions from Pesticides

California was the first state in the nation to identify pesticides that contribute most to air quality problems and to put measures in place to reduce those emissions. In 2006, DPR launched a major initiative to reduce volatile organic compounds (VOCs) emitted by pesticides. VOCs combine with other substances in air and produce ground-level ozone, a component of smog.

Although pesticides produce only a fraction of the total VOC emissions that lead to smog, each VOC source must be part of the air quality solution. Thousands of different pesticide products are used on farms, homes and businesses, a challenge for developing control strategies. DPR has approached the problem on several fronts.

We have funded grants to universities and grower organizations to help them develop alternatives to VOC-emitting pesticides. Alternatives may include products with lower emissions, technologies that reduce the amount of pesticide that needs to be applied, or pest management strategies that require little or no pesticide use.

Reducing fumigant emissions

In some areas of the state, more than half of all pesticide VOCs come from farm fumigants such as chloropicrin and 1,3-dichloropropene. Fumigant pesticides cannot be reformulated to reduce VOCs because the active ingredient is itself the gaseous compound. In areas with severe air quality

problems, DPR put regulations into place that limit fumigant emissions by reducing the amount applied and requiring low-emission application methods.

In 2008, the first year of fumigant controls, VOCs emissions dropped significantly. One year does not prove a trend as weather and pest infestations prompt changes in pesticide use. Nonetheless, VOC emissions in 2008 in the San Joaquin Valley declined by an impressive 16 percent from 2007 levels and 30 percent from 1990 levels. Bigger drops occurred in Ventura County and the Southeast Desert. (All three areas do not meet federal air quality standards.)

Nonfumigants the next target

DPR is now turning its regulatory focus to nonfumigant pesticides. Many liquid pesticide products contain solvents, a major source of VOC emissions. Using our authority to require registrants to provide solutions to environmental problems caused by pesticides, we placed non-fumigants into reevaluation in 2005.

As a result, pesticide makers reformulated several high-use, high-VOC pesticide products, replacing them with low-VOC versions. In 2010, we narrowed the reevaluation to products containing one of seven active ingredients that are the highest sources of VOCs, targeting the greatest risks to air quality.

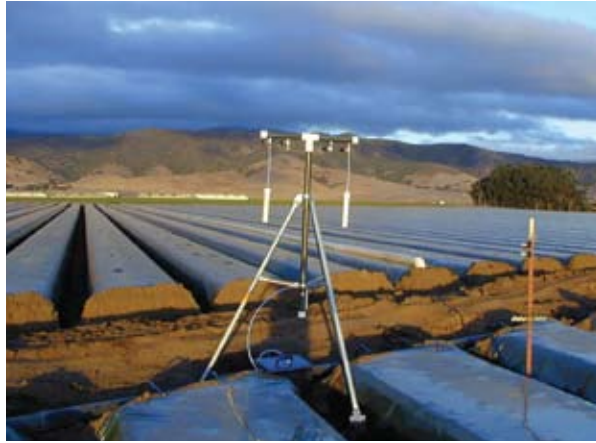
DPR staff wrote a conservation management practices guide that explains ways growers can reduce pesticide VOC emissions. We also created online calculators that can estimate emissions from both fumigant and nonfumigant pesticides. This allows farmers to compare emissions from different products and methods of application.

“DPR’s goal is to put restrictions into place by 2014 to reduce VOC nonfumigant emissions,” said DPR Director Mary-Ann Warmerdam. “DPR is proud of our contributions to improving air quality while balancing the ability of farmers to carry out changes necessary to reduce pesticide emissions.”

DPR PROJECT GETS SPECIAL RECOGNITION

In March 2010, DPR received special recognition from the U.S. Environmental Protection Agency for a U.S.EPA-funded project to reduce VOC emissions from pesticide use in orchard groups in the San Joaquin Valley. DPR’s project was lauded in particular for creation of Web-based VOC emission calculators and publication of a conservation management practices guide that explains how growers can do their part to reduce pesticide VOC emissions.





Reducing Air Toxins

Reducing air toxins is a major goal of the air quality initiative DPR launched in 2006. To learn more about pesticides in air and improve protective measures as necessary, we will set up the nation's first network to sample community air for pesticides. Beginning in 2011, DPR will have monitoring stations in two San Joaquin Valley communities and one in the Salinas Valley, sampling regularly over two or more years.

DPR's air monitoring network will sample for up to 34 pesticides and several breakdown products. Pesticides were selected based on use and volatility (both indicators of exposure) and their DPR risk assessment priority (an indicator of toxicity). DPR selected the communities based on several factors, including the amount of pesticides used and demographics related to risk assessment (for example, numbers of children and farmworkers).

Focusing on TACs and fumigants

Under the Toxic Air Contaminant (TAC) program, DPR evaluates pesticides in air and, in cooperation with scientific reviewers, determines potential risks. If we identify a pesticide as a TAC, we work with air districts and others to decide if stricter use controls are needed. In the six years from 2005 through 2010, DPR evaluated and placed on the TAC list sulfuryl fluoride, methidathion and endosulfan. DPR expects to list the fumigant chloropicrin in late 2010.

The law requires DPR to continually evaluate pesticides after they are in use. If we find a pesticide may have harmed people or the environment in normal use, it triggers a reevaluation. Reevaluation allows DPR to require new data from registrants so we can find out the extent of the problems and identify ways to eliminate them. DPR has two fumigants in reevaluation – chloropicrin and sulfuryl fluoride, gaseous pesticides more likely to get into air.

We have also developed stricter controls for metam sodium and other fumigants that produce methyl isothiocyanate

(MITC), already listed as a TAC. The proposed restrictions, toughest in the nation, are designed to prevent drift incidents like those that occurred in the early 2000s. The new controls take effect in late 2010.

Reducing toxins with technology

DPR's air initiative promotes environmentally friendly technologies that reduce pesticide use and associated drift.

These include:

- Equipment designed to deliver pesticides more precisely to the target, reducing use and waste. For example, DPR funded purchase of several “smart-spraying” devices for university farm stations to lend to farmers. These application rigs turn nozzles off in the spaces between plants.
- Variable-rate technologies that adjust the rate of application according to variations in field conditions.
- Remote-sensing and mapping technologies that can reduce pesticide use by guiding variable-rate applications, for example, mapping to pinpoint the most heavily infested areas so applications can be targeted there.
- In 2008, Governor Schwarzenegger supported DPR's request to reinstate funding for grants that promote integrated pest management to reduce the need for chemicals in favor of preventive strategies that work with the environment. Grants include funding to the grape, peach and almond industries to reduce the use of pesticides that can harm air quality.

Expanding Our Knowledge About Pesticides in Air

Throughout 2006, DPR conducted air monitoring in the Fresno County community of Parlier to learn what pesticides were in the air of a rural farm community and how levels varied over a year. The project was part of the California Environmental Protection Agency's Environmental Justice Action Plan.

The Parlier project built on the knowledge and experience DPR had gained in more than two decades of conducting dozens of air monitoring studies.

The project marked:

- The first time a community advisory group helped DPR frame goals, select monitoring sites, and decide other project elements.
- The first time DPR released preliminary results and evaluations during a project, posting interim reports online and discussing them with the local advisers at public meetings.
- The first time DPR or any government agency in the U.S. did pesticide air monitoring for 12 months in a single community.
- The first project to monitor so many pesticides – 40 in all, including pesticide breakdown products. It was also the first to include monitoring conducted jointly by DPR and the Air Resources Board for both pesticides and nonpesticide air pollutants like ozone.

Because there are no state or federal standards for most pesticides in air, DPR scientists worked with technical experts from other agencies to develop screening levels for the pesticides monitored. These levels helped DPR scientists evaluate the possible health effects of exposure.

Since Parlier is similar to many Central Valley towns, surrounded by farm fields and the associated use of pesticides, the analysis of hundreds of monitoring samples taken over a full year added substantially to our knowledge of pesticides in air.



DPR held a community fair in Parlier to kick off the project. We invited two dozen local agencies to talk about jobs, education, safety and health. These children – among 300 attendees – got to meet their local firefighters.

Highlights of the project's cumulative report, released in 2009, were:

- The greatest potential health risk in Parlier was not from substances used as pesticides but from two air pollutants found throughout California: acrolein and formaldehyde. Concentrations were similar to those found elsewhere in the state. The most likely sources are auto and industrial emissions.
- Of the 35 pesticides monitored (plus 5 pesticide breakdown products), 16 were detected (plus 3 breakdown products.) Measured amounts varied, depending on the pesticide.
- The insecticides chlorpyrifos and diazinon were among the pesticides found most often. Amounts were below health screening levels, with one exception. These chemically related pesticides posed the highest

noncancer risk among pesticides detected, prompting DPR to direct added resources to ongoing risk assessments for these compounds.

- Detections of 1,3-dichloropropene (1,3-D) prompted DPR to reopen its risk assessment and reexamine the management plan designed to keep 1,3-D levels below levels that may pose a risk. This fumigant is a carcinogen and lifetime exposure at the levels detected may be of health concern.

Several years before the Parlier project, DPR began planning a network of monitoring stations to sample for pesticides in air over two or more years. The Parlier project served to test and perfect sampling protocols, develop health screening levels, improve and expand laboratory analytical methodology, and fine-tune approaches to data analysis.



Protecting Surface Water

Pesticides can compromise water quality. If they do, the problem might be traced to a river surrounded by farms or a stream in an urban neighborhood. Whatever the source, DPR is committed to solving water quality problems caused by pesticides, using the best science available and finding workable, effective solutions. Our actions draw from data gathered in more than 25 years of water quality monitoring and analyses.

For example, diazinon and chlorpyrifos are two insecticides found often in surface water. At our request, manufacturers added new use instructions to their product labels, designed to reduce concentrations in surface water. We continue to monitor waterways to see if the controls are working. Because pesticide use varies each year depending on weather and pest pressures, several years of data will be needed.

In 2007, DPR adopted regulations to protect water from runoff of agricultural insecticides applied to tree and vine crops during the winter dormant season. The new rules require the use of alternative pesticides, a buffer zone between the application and waterway, or other means to prevent contamination.

We also support outreach to educate pesticide users on proper pesticide use and disposal, and on how to prevent pests using integrated pest management strategies that stress less pesticide use.

A more comprehensive approach

Because more needs to be done to reduce surface water contamination, DPR explored a more comprehensive approach. We began with an informal dialogue with stakeholders in 2009. We met with county agricultural commissioners, industry groups, the State and Regional Water Boards, and representatives of wastewater treatment plants and stormwater agencies to draft a series of potential controls. In early 2010, DPR held three workshops to get public comments on the draft.

Our goal is to develop controls that are practical, enforceable and effective in improving the environment. Building on the dormant spray regulations, the new rules would affect both agricultural uses and nonagricultural pesticides used by pest control businesses (not consumers). The controls would affect as many as 30 pesticides found in surface water at levels toxic to aquatic organisms. DPR expects to begin formal rulemaking in 2011.

Cleaning up copper

Over the past several years, we have also been working with local and regional agencies, environmental groups, the boating industry and marina representatives to improve water quality in bays and marinas. Most boats are painted with copper-based paints to prevent the growth of barnacles, slime, weeds and other organisms. Copper is considered a pesticide when used in this way. In 2006, DPR monitoring found that copper concentrations in many marinas exceeded levels that could harm marine life.

In mid-2010, DPR opened a reevaluation of copper boat paints to find ways to reduce copper concentrations in marina waters. DPR is also working with stakeholders to encourage voluntary development of and use of alternative coatings and management practices to reduce copper contamination. DPR has been working with the University of California and the Port of San Diego on major projects to evaluate the efficacy of alternative boat paints, and to estimate costs for their use.

Advancing Reduced-Risk Strategies

The past two decades have seen significant advances in reduced-risk pest management – not only in development of new strategies but in their widespread adoption in farms, businesses, schools and homes. It is an evolution that has had a revolutionary effect on the way we look at pests and pesticides.

Although many might assume that DPR simply regulates pesticides, that is not the case. We have a statutory mandate to encourage the development and implementation of pest management systems that stress

inspiration and courage in pursuing new systems of pest control.” Since then, the award has achieved a standing we could not have imagined in 1994, as recipients now tout it in their brochures, marketing, social media

partnerships with private and nonprofit organizations that promote safer, less toxic strategies tied to DPR’s regulatory priorities to protect air, water and human health. Many projects have become self-sustaining, statewide efforts that permanently change pest management strategies for the better. By 2002, when budgetary cutbacks forced the department to suspend its grant programs, we had given out \$7.2 million in grants and Alliance funding. In 2007, the Alliance program was reinstated and since then, DPR has awarded \$1.94 million to 11 projects.

Recent recipients typify the variety of projects DPR has supported:

- The Healthy Homes Campaign is proving the effectiveness of IPM in several privately owned, multi-unit housing complexes in Los Angeles and will share the results with local public health and housing authorities and media to promote widespread adoption of IPM. IPM strategies in target buildings include educating tenants about sanitation and clutter control; implementation of environmentally friendly cleaning practices in residential units; sealing holes and cracks to prevent pests; and use of pesticides that are less toxic than traditional treatments.
- The University of California’s Bedding and Container Color Plants project is developing IPM strategies for an industry where producers grow many varieties, have short production schedules, and regard aesthetic quality as essential. The project is developing IPM strategies



DPR funded purchase of “smart-spraying” devices (left) for university farm stations to lend to growers. These application rigs reduce pesticide use by turning off nozzles between plants. At right, a farmer checks a device which releases a pheromone attractant that reduces pest populations by confusing insect mating behavior.

biological, mechanical and cultural pest control techniques. Pesticides, used only when necessary, are chosen to ensure the least possible harm to nontarget organisms, public health and the environment. This is often called “integrated pest management,” IPM for short.

Recognizing pioneers

At one time, pest management pioneers received little credit for the financial and other risks they took to find more environmentally friendly ways of fighting pests. In 1994, DPR kicked off its IPM Innovator Awards as a way to provide overdue recognition to those groups and organizations that, as we said at the time, display “skill,

and Web sites. By early 2010, DPR had presented more than 100 IPM Innovator Awards.

Funding advancements

DPR also provides more tangible backing in helping agricultural and nonagricultural groups pursue reduced-risk strategies. In 1996, DPR kicked off its “Innovations in Pest Management” grant project. That first year, more than \$600,000 in small grants went to projects to encourage nontraditional, least-toxic solutions to agricultural and urban pest problems.

The next year, we launched a complementary project of larger “Alliance” grants to develop

to manage pests with less-toxic pesticides and fewer applications. An IPM guide for bedding plants, a pocket guide for pest identification and a Web site is being developed to share the information.

- The IPM Continuing Education for Maintenance Gardeners project is focusing on reducing pesticide runoff into urban creeks in San Luis Obispo County by educating local maintenance gardeners and retail outlets that sell pesticides about IPM practices. The county and its community partners offer free, seasonal IPM workshops at participating retailers that include training on proper pest identification methods and tools, alternatives to chemical pest controls and information about less-toxic pesticides. The workshops, in English and Spanish, complement another county project that offers workshops to prepare participants to take the state licensing exam for maintenance gardeners.
- The city of San Jose will create a pesticide-free park and demonstration gardens at Guadalupe River Park. The demonstration gardens will resemble yards of typical single-family home yards and convey IPM principles through interpretive signs and self-guided tours, brochures, podcasts and cell phone apps. Residents will learn how to replace lawns with drought-tolerant plants that reduce energy and water use as well as provide habitat for birds and beneficial insects.
- The Bay Area Stormwater Management Agencies Association's project will train "IPM Advocates." They, in turn, will educate retail store employees and their customers about IPM strategies that can reduce pesticide use and associated runoff into urban creeks and San Francisco Bay. The project will target pesticides with a known effect on surface water quality in urban and suburban waterways.



MAKING IPM PART OF THE SCHOOL DAY

DPR has a key role in carrying out the Healthy Schools Act, a 2000 law which made integrated pest management (IPM) the preferred way to manage pests in public schools. IPM is a strategy to prevent and treat pest problems using a combination of prevention, monitoring, recordkeeping and control methods. Chemical controls that pose the least possible hazard to human health and the environment are used only after careful monitoring and when nonchemical methods have failed.

DPR staff regularly conduct workshops to train school district IPM coordinators. In turn, these specialists teach school maintenance and operations staff about reduced-risk strategies to control cockroaches, ants, rodents, weeds and other pests. By the end of 2009, DPR had brought training to 739 of the state's 1,039 public school districts, representing about 4.5 million students.

After the Healthy Schools Act was amended to include child day care centers, DPR adapted its school IPM pest fact sheets for use in these settings and created new Web pages just for day care centers. DPR staff also distributed child-care oriented IPM publications in English and Spanish and made presentations to child-care staff, trainers, and pest control professionals.

As part of DPR's commitment to maintaining a dynamic program, we funded a survey by the University of California to ask child care centers what their worst pest problems were and how they deal with them. The survey showed that pest problems and pesticide use are common. Fifty-five percent of the facilities reported using pesticides to control pests. In response to the results, we are tailoring our educational efforts to inform child care center groups and pest control professionals about their responsibilities under the law.

Invasion!

West Nile virus, sudden oak death, killer algae. California is under attack from alien invaders: foreign weeds, insects, animals and diseases. They are feasting on and infesting our agricultural and natural resources. They harm urban and rural landscapes and cause billions of dollars in lost revenue and millions in cleanup costs. These “biological pollutants” damage ecosystems by outcompeting native species for food and water, reducing diversity. They have placed other species at increased risk of extinction.

California, with its varied climate and geography, is an ideal home for many different invasive species. Most arrive as an unintentional byproduct of commerce, tourism or travel. On the average, a new and potentially damaging species invades California every two months.

California’s county agricultural commissioners (CACs) are on the frontlines of this invasion. Among their many duties is “pest exclusion,” detecting the invaders before they can get a foothold. Eradication may be possible early in an invasion or in a restricted area. Once established, counties focus their efforts to limiting spread to uninfested areas.

Here, five county agricultural commissioners share their experiences with these invaders.

Bob Atkins, San Diego County CAC

Diaprepes root weevil (*Diaprepes abbreviatus*, or DRW) was found in Los Angeles, Orange and San Diego Counties in late 2005 and early 2006. It feeds on more than 270 species of plants. In California, it poses the greatest threat to citrus, avocado and ornamental nursery plants.

Funding to eradicate the pest ran out in 2009. By then, the infestation was widespread here in coastal San Diego County. Quarantines that had regulated the movement of crops into and out of DRW-infested areas were revoked in April 2010. DRW is now a pest of limited distribution and is prohibited in commercial nursery stock, meaning that nurseries must make sure their plants are DRW-free before shipping.

In San Diego some citrus groves have lost many trees which tipped over from the loss of their roots. The University of California Cooperative Extension is working on biocontrol and pesticide applications to establish an integrated pest management system against DRW. Research shows promise for several egg parasitic wasps and for nematodes that attack the grubs in the root zone. The pesticide bifenthrin is being used with the nematodes to enhance control in commercial groves and nurseries. The greater problem will likely be for

landscapers and residents who will have difficulty achieving control because neighbors will be unlikely to coordinate their efforts.

John Gardner, San Bernardino CAC

San Bernardino County has borne the brunt of many invasive species. Some have become established, like the Bagrada bug, red imported fire ants and Africanized bees. We have eradicated multiple invasions of Oriental fruit flies, Medflies and Mexican fruit flies with minimal pesticide use or by biological techniques. Despite the disruption to agriculture from temporary quarantines and the inconveniences caused to the public, every invasive species halted before it becomes established reduces the need for increased pesticide use. This results in a tremendous net benefit for the environment and public health.

Dave Whitmer, Napa CAC

European grapevine moth (EGVM, *Lobesia botrana*) was found for the first time in North America in Napa County in fall 2009. (Since then, it has been detected in eight other Northern California counties.) EGVM has the potential to negatively affect the sustainable farming systems we use in Napa County. When first found, swarms of EGVM were seen in some Napa Valley vineyards. Local growers, my staff and the University of California worked hard to bring the moth under control, developing a solid pest management strategy that is least disruptive to beneficial organisms and to sustainable, least-toxic pest management programs. Napa winegrape growers are also very conscious of being good neighbors with the local community and areas surrounding their vineyards. They do not want to see this pest spread further but they also recognize the need to use practices that make good sense environmentally and socially.

Our next step was to involve the local urban/residential grape grower. We asked noncommercial grape growers and county residents to get involved in our “Kick the Moth Out” campaign. Our message is simple. We asked those who do



not plan to use their grapes to remove the fruit from the vines and dispose of it with other yard waste. But if they plan to use the grapes, we encourage them to inspect for EGVM and, if necessary, treat with organic insecticides. These efforts are designed to prevent insipient infestations that could then reinfest commercial vineyards.

Vince Guise, *Contra Costa CAC*

Japanese dodder (*Cuscuta japonica*) is a nonnative parasitic plant that can kill most trees and shrubs. It looks like twisted, yellow-to-orange strands of spaghetti and can grow six inches a day. It forms dense mats that engulf its host plant, robbing it of food and water until it eventually kills the host. Japanese dodder reproduces through dissemination of small fragments of stems. These plant parts can be spread by birds and squirrels that use it as nesting material, and by human activities such as pruning and improper disposal of infested plants. Also, because of perceived medicinal value of the plant, certain cultural groups have intentionally moved or introduced Japanese dodder. Our outreach to these groups has been successful in deterring this practice. This parasitic weed has great potential to damage riparian areas and urban landscaping. Host plants include California live oak, California buckeye, coast redwood, elderberry, willow, ivy, blackberry, apple, plum, acacia, orange, cypress, deodar cedar, pine, Carolina cherry, and others.

Japanese dodder has been found in 14 California counties. Contra Costa CAC staff have removed it from 46 properties in the county since 2006. Most were ornamental landscaped areas at homes. Removal can be quite a task. Infested plants – sometimes including large trees – are removed using chainsaws and hand tools. Infested material is loaded into a lined trailer and secured with heavy plastic sheeting. We then take it to a landfill where it is immediately buried. One infested site with a few small trees and about 100 feet of ivy-covered fence in an industrial area involved three days

of work by up to eight people. After removal, staff will visit these sites often to ensure that this invasive weed has not reestablished itself.

Our staff are trained to look for this as well as other invasive pests. New detections have been discovered through outreach such as newspaper articles, post cards mailed to residents, and from training sessions we have given to landscapers, city workers, pest control operators, Farm Bureau members and Cooperative Extension staff.

Carol Hafner, *Fresno CAC*

Vine mealybug (*Planococcus ficus*) is a perfect example of an invasive pest that became established and caused the kind of significant economic and ecological harm that pests can create when spreading into an environment without natural defenses. By the time discussions began on quarantine measures, vine mealybug had already spread to a level that left its control in the hands of growers vexed with this pest. Vine mealybug is difficult to control because it can exist in hidden locations on the plant above and below ground, which protects it from most foliar insecticides, high summer temperatures, parasitoids and other natural enemies. Because of these factors, the use of pesticides to control and suppress the population of vine mealybug has increased since 1994, as this pest continues to spread. The impact on exports has also been significant. Twelve trading partners have restrictions or prohibitions on host commodities for vine mealybug. They consider this pest a harmful organism and can prohibit entry of commodities into their channels of trade.

According to the University of California Cooperative Extension, there are no prospects for containment or eradication. However, UC has continued massive research efforts to find solutions to control this pest, including mating disruption in wine grape production.

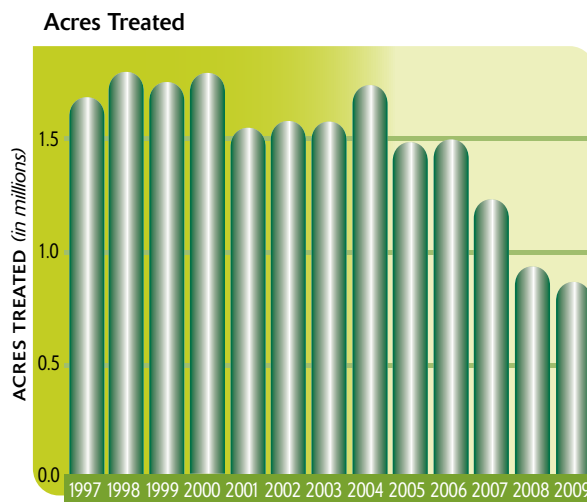
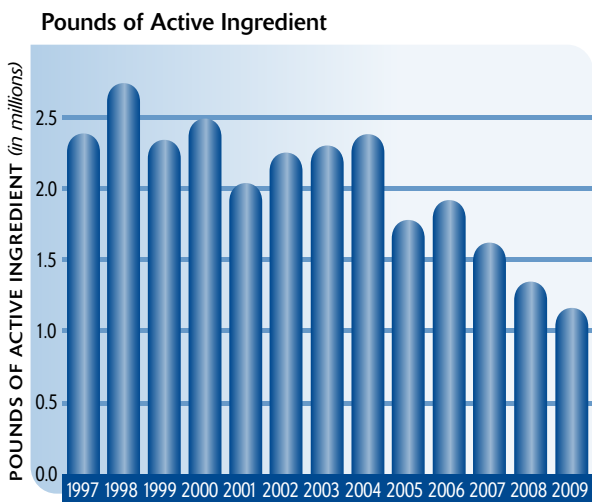
Photos (above from left): European grapevine moth (photo courtesy of Napa CAC); diaprepes root weevil (Keith Weller, USDA Agricultural Research Service, Bugwood.org); Mediterranean fruit fly (USDA Agricultural Research Service Photo Unit, Bugwood.org)

Significant Declines in Higher-Hazard Pesticides

The past five years have seen significant decreases in the use of several categories of higher-hazard pesticides. On these two pages are charts illustrating the declining use of ground water contaminants, pesticides that inhibit cholinesterase (a brain enzyme that helps regulate nerve impulses), pesticides listed by Proposition 65 or the U.S. Environmental Protection Agency as carcinogens and pesticides on the Proposition 65 list of reproductive toxins.

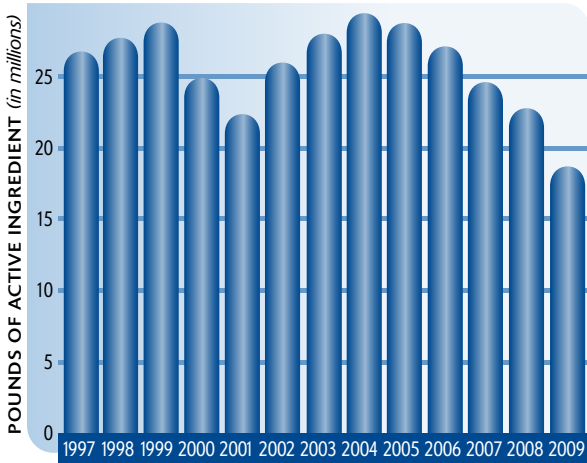
There are a variety of reasons for these trends. Some older pesticides are being replaced by newer, more targeted (and typically less toxic) alternatives. Other, higher-hazard pesticides are subject to increasing restrictions, making them more difficult to use. For example, since 2004 the use of pesticides known to contaminate ground water has declined by more than 50 percent in both acres treated and pounds used. To better protect ground water, in 2004 DPR put into place new restrictions on pesticide use. The new rules focus on areas that DPR computer modeling identified as the most vulnerable to pesticide contamination from leaching and runoff. Previously, restrictions only affected about 300,000 acres in the state. The new – and stricter – use controls apply to about 2.4 million acres. In these areas, applications of pesticides known to contaminate ground water are subject to prohibitions or strict controls designed to prevent the pesticide from reaching ground water.

PESTICIDES FOUND IN GROUND WATER

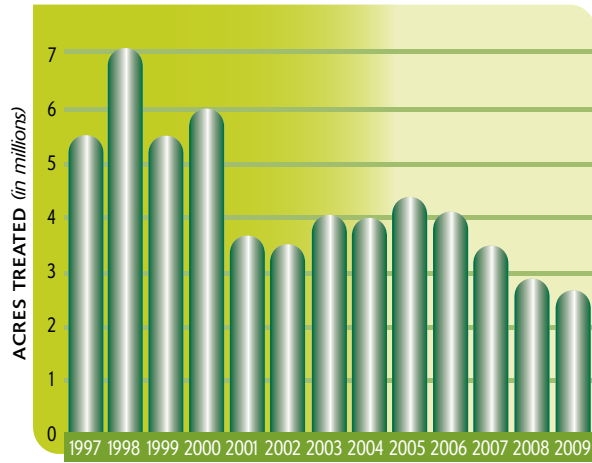


PESTICIDES LISTED BY PROPOSITION 65 OR U.S. EPA AS CARCINOGENS

Pounds of Active Ingredient

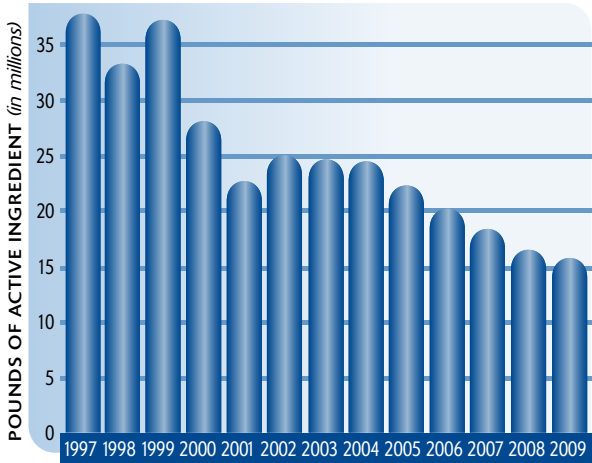


Acres Treated

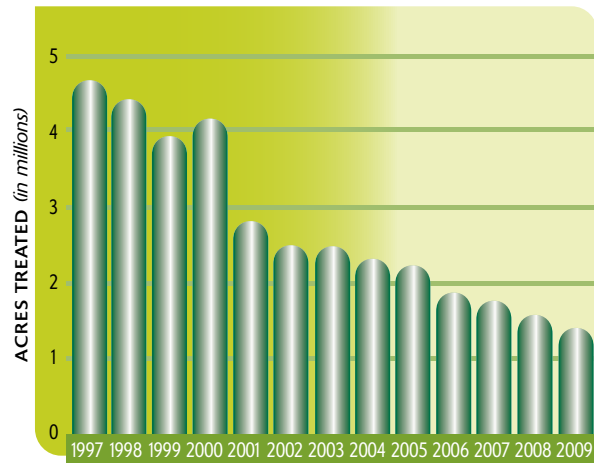


PESTICIDES LISTED BY PROPOSITION 65 AS REPRODUCTIVE TOXINS

Pounds of Active Ingredient

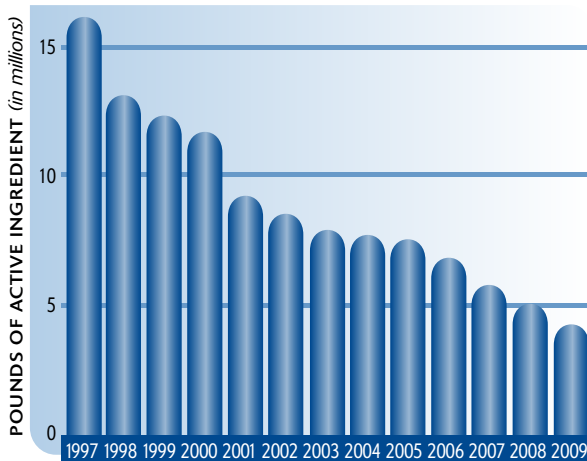


Acres Treated

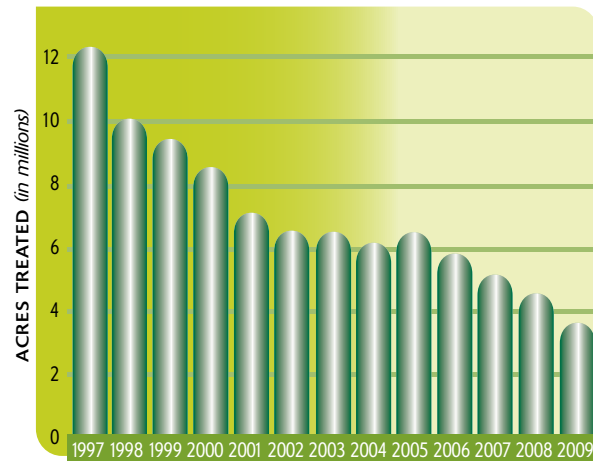


PESTICIDES THAT INHIBIT CHOLINESTERASE

Pounds of Active Ingredient



Acres Treated



Stronger Enforcement Protects Everyone

Since 2004, DPR and the county agricultural commissioners (CACs), the state's local pesticide enforcement agents, have carried out several projects to strengthen enforcement and better protect workers, the public and the environment.

Focusing priorities

In late 2004, DPR and the CACs jointly developed guidance to improve enforcement by focusing on:

- Restricted material permitting.
- Compliance monitoring through inspections and investigations.
- Enforcement response to violations.

Continual program review

DPR provides counties with guidance to target core enforcement program priorities. As part of an organization-wide effort to incorporate continual quality improvement into the state's pesticide enforcement program, DPR and the CACs developed a cycle for state and local program review, planning, implementation and evaluation.

DPR regional staff help CACs develop annual work plans that detail state, regional and local compliance problems and measurable solutions based on available resources. Regional staff also evaluate CAC performance, using measures that examine how well counties are targeting local problems and patterns of continuing violations. County work plans and evaluations are posted online.

Tracking success

Tracking the enforcement programs conducted in the state's 58 counties involves tracking tens of thousands of permits, inspections and enforcement actions. In 2008, we consolidated CAC data from several DPR databases to create an online template of enforcement metrics. DPR and the CACs can use this Enforcement Statistical Profile to develop county work plans and conduct evaluations. It also helps identify trends and program changes, and both CAC staff training and industry outreach needs. The statistical profile improves inspection compliance by developing better inspection targeting programs.

Upgrading inspections

In 2009, DPR's Enforcement Branch completed a two-year project to upgrade the inspection program used by DPR and CAC staff. Forms used in 22 types of inspections that evaluate compliance with laws and regulations were revised to better align inspection criteria.

DPR's online *Pesticide Use Enforcement Program Standards Compendium* was updated and DPR and CAC staff trained in how to use the new criteria. The final component involved extensive changes to the inspection tracking database that DPR uses to capture, track and analyze compliance. Conversion to the new database took place in early 2010.

Consolidating databases

The Enforcement Branch collects and analyzes data available through DPR and other sources to help develop enforcement metrics on a statewide, regional and local basis. Information and analyses are shared throughout DPR to address worker protection, integrated pest management, water quality, air quality (contributions to smog and ozone depletion) and endangered species protection.

In the next several years, DPR plans to develop an application to bridge DPR's diverse databases. This will create a fully integrated pesticide regulatory data management system that can improve how DPR assesses its programs and their effectiveness.



This project led to development of an enforcement response policy which gave CACs a standardized approach to classifying violations and taking appropriate enforcement actions to ensure the most serious violations drew the heaviest penalties. DPR formally adopted this policy into regulation in late 2006. DPR plans to amend the rules in 2011 to improve their workability.

Ensuring Equal Protection

Treating people fairly guides how DPR conducts its activities. 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 should be able to take part in the regulatory process. DPR formalized incorporation of these environmental justice (EJ) principles into our programs and policies when we updated our Strategic Plan in 2008 and made ensuring EJ one of its five goals.

Getting help and answers

EJ advocacy groups had criticized DPR in the past for not giving people information needed to recognize and report pesticide problems. To help address this, in late 2006 DPR launched an automated, toll-free line (1-87PestLine) that gives callers the phone number of the county agricultural commissioner (CAC) and then offers to transfer the caller there. The CACs are the state's local pesticide enforcement agents. The recorded line, in English and Spanish, is designed to encourage timely filing of pesticide complaints, a key to successful investigation.



In 2008, DPR published a 34-page Community Guide to Recognizing and Reporting Pesticide Problems. Topics include what to do in a pesticide emergency, a discussion of pesticide drift and odor, and a checklist to record details about a pesticide incident. After the first printing of 5,000 copies ran out, DPR printed several thousand more, including a Spanish-language version targeted for ethnic settings. DPR sent the Guide to more than 900 community health centers, county health departments and to every public library in the state. It may be downloaded from the DPR Web site and free copies are available on request.

Widening opportunities to participate

As one way to widen public participation in regulatory decisionmaking, DPR schedules regulatory hearings outside Sacramento at times and places convenient to local residents, with simultaneous translation into Spanish. DPR routinely translates key regulatory documents into Spanish. In 2006, we changed how we select pesticides for risk assessment by opening it to public comment. We also have posted more than 50 completed risk assessments online. To further increase transparency in decision-making, in 2007 all DPR program managers and supervisors took a week-long class on how to get the public more involved in the decisions DPR makes on policies and activities.

REACHING OUT TO WORKERS AND THEIR FAMILIES



State law was amended in 2004 to require DPR to “create a program to conduct outreach and education activities for worker safety (including) rights and procedures of workers and those potentially exposed to pesticides and how to file confidential complaints.” DPR redirected existing funding to hire an outreach specialist (Martha Sanchez, pictured here in a public service announcement on the dangers of insect foggers) to coordinate activities aimed at Hispanic workers and communities. She and other staff take part in workgroups; provide literature to migrant clinics and other care facilities; staff information booths at health fairs and other festivals; and participate in radio and television interviews on pesticide safety.

Legislation Enhances DPR Authority, Effectiveness

Recent legislation has enhanced DPR’s authority and effectiveness. One of the most significant legislative accomplishments was the passage of Assembly Bill 1011 (Matthews, 2005). The bill streamlined product registration by changing how DPR handles registration data. Other provisions gave DPR authority to ensure that everyone who sells pesticides in California complies with registration requirements and pays their fair share for environmental programs.

Streamlining registration, closing loopholes

Before the passage of AB 1011, DPR was prohibited from considering data submitted by one company to evaluate another company’s application to register a pesticide product or amend

The law did not change any of DPR’s comprehensive requirements for health, safety and environmental data. However, with the passage of AB 1011, DPR can consider all data it has on file, regardless of the source. AB 1011 also authorized DPR to use previous evaluations of pesticide products when evaluating new registrations and label amendments.

Applicants may still submit their own data in support of a registration application. If the applicant does not do so and wants DPR to instead use another company’s data to support its registration application, the applicant may be required to offer to pay the data owner a share of the cost of producing the data.

AB 1011 removed the requirement that DPR scientists repeatedly review the same data each time an identical or similar product was submitted for registration. Cutting out this busywork makes it possible to use earlier scientific evaluations for new applications. This reduced the time to process a registration application by more than 25 percent.

The bill made it easier for generic pesticide products (typically lower in cost) to enter the California market. During legislative discussions, this raised concerns that more products

containing older, more toxic ingredients would be registered and used. However, a 2009 DPR analysis found that while there was a slight increase in registration of these products, there was no correlation between this increase and the total pounds sold of these compounds.

AB 1011 also expanded broker licensing requirements. Before AB 1011 passed, only sellers of agricultural-use pesticides had to be licensed. DPR auditors had uncovered loopholes in previous laws that allowed some pesticide dealers and sellers to avoid reporting sales and paying sales fees. At particular issue were sales of industrial, institutional, and consumer-use pesticide sales on the Internet by intermediate brokers, and through the distribution centers of nationwide retailers.

The legislation expanded broker licensing to encompass all those who first sell or distribute any pesticides into California, whether agricultural or nonagricultural products. The goal was to promote a safe fair, and equitable marketplace by ensuring only California-registered products are sold in the state and that fees levied on pesticide sales are paid on all sales.

a registration without a letter of authorization from the company that originally submitted the data. This requirement allowed data-generating companies to essentially keep smaller competitor companies out of the California market by refusing to grant a letter of authorization. Many small companies could not afford to generate the required data themselves.





OTHER LEGISLATION OF NOTE INCLUDES:

Senate Bill 391 (Florez, 2004)

Made violators legally responsible to pay certain medical costs of victims if a pesticide use violation causes illness or injury. The law was prompted by pesticide drift incidents that sickened people living near agricultural fields. Many were without medical insurance and could not pay for treatment. SB 391 also increased penalties that DPR and the county agricultural commissioners can impose for pesticide violations.

AB 405 (Montanez, 2005)

Outlawed school use of certain pesticides approved by DPR under a conditional or interim registration, or under an experimental use permit. To help schools comply, DPR posts a list of these pesticides on its Web site.

AB 2865 (Torrico, 2006)

Expanded the Healthy Schools Act of 2000 to private child day care facilities which (except for family child care homes) now have to comply with certain recordkeeping and notification requirements when they use pesticides. The law also requires DPR to promote adoption of integrated pest management by child day care facilities as we have done for K-12 schools.

SB 1723 (Maldonado, 2008)

Required that the first company or individual to sell certain types of pesticide products must set up a program to recycle containers or show that they take part in a recycling program. The law applies to products packaged in rigid, non-refillable, high-density containers of 55 gallons or less.

Structural Pest Control Board

Was transferred from the Department of Consumer Affairs to DPR as a result of legislation in 2009. The Board regulates the structural pest control industry, licensing businesses and individuals who conduct structural pest control.

AB 1963 (Nava, 2010)

Requires laboratories that do blood tests to determine worker exposure to cholinesterase-inhibiting pesticides to report the results to DPR. (Cholinesterase is a brain enzyme that helps regulate nerve impulses.) Previous law had already required employees who regularly handle categories of pesticides that inhibit cholinesterase to be regularly tested to determine if they have been overexposed, but did not require reporting of the data to DPR.

MONITORING THE MARKETPLACE

DPR staff routinely conduct inspections at hardware stores, retail and wholesale nurseries, landscape material suppliers, pet suppliers, pool and spa centers, or any other site where pesticides are sold. They inspect products offered for sale, reviewing labels to ensure they are registered. They also check that product labels are the same as those approved by DPR's Registration Branch – that there are no changes to claims or uses, or to precautionary statements that mitigate environmental and health hazards. This is to ensure that the products have been evaluated and will not cause health or environmental problems.

Produce Compliance Branch staff also audit pesticide sellers throughout the country to determine if their pesticides are registered, to verify sales, and to document that mill assessments were paid. If sales are found of unregistered products, or if mill assessments were unpaid, sellers must pay any monies owed and are subject to civil penalties.

In 2009, DPR staff conducted about 400 inspections and 80 audits. They found close to 500 unregistered and misbranded pesticide products, which were removed from the marketplace. DPR completed legal proceedings on 99 cases, collecting more than \$1.1 million in penalties from violators.

Delivering Services, Information Online

The public and industries that DPR regulates expect faster, more convenient interaction and service. Budgetary challenges provide added impetus to government’s continuing process of becoming more efficient and effective. One of the best ways to do this is to make better use of information technology.

Online databases

In 2005, DPR launched the nation’s first interactive online database to help protect endangered species from pesticides. It allows pesticide applicators and others to quickly identify habitat for endangered



DPR’s well water database will go online, providing access to data on nearly 2 million analyses of more than 22,000 wells..

animals and plants and view the required precautions to prevent harm. The search engine replaced more than 2,500 pages of county-specific paper bulletins that were difficult to search for specific location and pesticide.

In 2009, DPR introduced a Web-based search engine of DPR’s unique database of pesticide-related illnesses and injuries. California Pesticide Illness Query, or CalPIQ, includes illness and injury data since 1992. Users can request data based on customized variables, including year and county

where the incident occurred, whether the use was in agriculture or not, and specific pesticide by toxicity category, active ingredient or intended use.

“Our scientists respond to dozens of requests each year for illness data,” said DPR Director Mary-Ann Warmerdam. “CalPIQ provides access to and transparency of the data so researchers and the public can do their own searches, immediately and easily.”

Expected to go online in the next several months will be a Web interface with DPR’s database of pesticides found in well water. By law, DPR must take specific actions to prevent pesticide pollution of ground water. To do so, we maintain a database of well sampling results submitted by state and local agencies. The database, set up in 1983, contains more than 1.8 million sample analyses filed by 45 agencies. The data are from more than 22,000 public and private wells, sampled for more than 340 pesticides and breakdown products.

Improving customer service

In 2004, DPR started a system that sends e-mails to pesticide registrants as their registration applications move through the process. This gives them better and timelier information and makes more efficient use of staff time. In 2009, we finished a two-year project to update and put online our Registration Branch Desk Manual, a reference guide detailing the specific steps involved in and the data required to register pesticide products.

We redesigned Web pages for the Pesticide Registration Branch and Licensing and Certification Program to make them easier to navigate. Next up is doing this for our whole site, to help people more easily find information and services.

In the next year, another Web site upgrade will make it possible for individuals and businesses that advise, recommend or apply pesticides to renew their licenses online. That will be followed by a project to allow licensing applications online as well. In the long term, our plans are to set up systems to accept pesticide registration applications electronically, including viewable product labels.

We have also begun a project that will enable pesticide registrants to pay their mill assessment fees and conduct secure business transactions with DPR over the Internet. (The mill assessment, a fee levied on pesticide sales, is DPR’s largest revenue source.) This technology initiative is designed to help strengthen our audit and investigation programs, to do a better job making sure pesticide products are registered for sale and use in California, that they are labeled correctly, and that required fees have been paid. DPR’s return on investment includes goals that project increases in mill revenue by 20 percent and findings of unregistered and misbranded pesticides by 15 percent. We expect to implement the system by mid 2013.



ON THE COVER

DPR conducts surface water monitoring for pesticides in both agricultural and urban environments. As part of our agricultural monitoring, samples are collected from areas where agricultural pesticides are applied in high amounts. These data are used with data from other monitoring to help DPR develop science-based policies. For example, DPR is working on new regulations to reduce pesticide contamination in surface water. Pesticides that have been detected in surface water would be regulated differently from those that have not been..

In this photo, a DPR environmental scientist collects surface water samples for pesticide analysis from the Salton Sea near the mouth of the Alamo River in Imperial Valley.

We would like to thank DPR staff for the wonderful photographs of their work that are featured throughout this publication.

Editor: Veda Federighi

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MISSION

DPR's mission is to protect human health and the environment by regulating pesticide sales and use and by fostering reduced-risk pest management. DPR's strict oversight begins with pesticide product evaluation and registration and continues through statewide licensing of commercial applicators, dealers, consultants, and other pesticide professionals; evaluation of health impacts of pesticides through illness surveillance and risk assessment; environmental monitoring of air, water, and soil; field enforcement (with the county agricultural commissioners) of laws regulating pesticide use; residue testing of fresh produce; and encouraging development and adoption of least-toxic pest management practices through incentives and grants. DPR is one of five boards and departments within the California Environmental Protection Agency.



ARNOLD SCHWARZENEGGER

Governor

LINDA S. ADAMS

Secretary for Environmental Protection

MARY-ANN WARMERDAM

Director

Department of Pesticide Regulation

DEPARTMENT OF PESTICIDE REGULATION

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Medical Toxicology Branch

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Pest Management and Licensing Branch

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