

Preventing Pollution

Air, water, and waste recycling programs aim to protect and enhance our environment without needless disruption to the economy. This carries out two of Cal/EPA's founding objectives – to “act to prevent the creation of pollution” and to view environmental protection and economic progress as complementary, not competing goals.

Clearer rules for cleaner skies highlight our agenda



PARTNERSHIP ATTACKS SMOG WITH \$160,000 EPA GRANT

We've teamed up with federal, state, and local agencies on a project to reduce smog-causing emissions from valley peach, almond and walnut orchards. The effort is backed by a \$160,000 grant from the U.S. Environmental Protection Agency in 2008.

Our plan is to create a multi-agency project team that spans San Joaquin, Stanislaus and Merced counties. In addition to growers, pest control advisers and service providers, our group will include the Natural Resources Conservation Service and county staffers. The goal is to produce a new guide emphasizing reductions in air emissions and overall pesticide use. We also plan to harness training and outreach resources from the DPR Pest Management Alliance Program, University of California Cooperative Extension and UC IPM programs, and commodity groups to make the most of this project.

In spring 2009, DPR will revise rules that were put into place to help bring clearer skies to areas of California where volatile organic compounds (VOCs) emitted by pesticides are a significant contributor to smog. Our new regulations will update the most complex, controversial, and sweeping environmental initiative we've ever undertaken. This is the first air quality program in the nation to focus only on pesticides.

While pesticides produce only a small fraction of the total emissions that lead to smog, California faces daunting air quality goals. All of us must be part of the solution. DPR's commitment to federal and state air regulators is to reduce pesticide emissions now and in the future. In return, we can select regulatory solutions that best suit our environment and economy.

Major progress was made in 2008 as state and federal court rulings essentially reaffirmed DPR's approach to regulating pesticides in the air. For several years, the efforts of DPR and the California Air Resources Board (ARB) to carry out thoughtful, effective rules to reduce pesticide air emissions were hampered by litigation challenging DPR's regulatory mandate. Some stakeholders sought to force harsh restrictions on pesticides that would have caused economic chaos in farm communities. On the other hand, there were those who refused to recognize that changes in pesticide

use must play a role in improving air quality.

DPR sought a more reasonable course. We pledged to comply with the federal Clean Air Act and meet our obligations to public health, while working with all parties to establish practical air rules. In cooperation with the ARB and the U.S. Environmental Protection Agency, we sought a logical, predictable approach that could guide pesticide standards for years to come.

Our current focus is on fumigants, since they are a significant source of VOCs. Statewide, more than half of all pesticide VOCs may be traced to fumigant use. Yet fumigants are also essential to producing many high-value crops. DPR has devoted enormous time and effort to resolving this conundrum.

In mid-2008, DPR's successful appeal of an earlier court order allowed us to proceed with our plan to phase in controls in Ventura County. Growers there had faced allotments on fumigant use that threatened to idle thousands of acres. Working with ARB, we then began a phase-in that will give growers four years to reduce fumigant use, allow them to remain economically viable and still meet clean air goals for their area.

Even more strict federal air standards lie ahead, so we are looking beyond fumigants to other pesticide solutions. In cooperation with a leading



registrant, DPR recently registered a new formulation of chlorpyrifos. While this insecticide is sometimes essential for San Joaquin Valley growers, it also has a high potential for emissions. The new, improved formulation could reduce that load about 45 percent an acre. To encourage use of the lower-emission product, DPR will not renew the special registration of the older product that would be required to continue its use.

We are hopeful for similar progress with other non-fumigant products. Our goal is to avoid the need for future emission allowances that would restrict grower access to specific pesticides. Meanwhile, we'll also continue to encourage new pest management strategies that rely less on traditional chemical tools and more on prevention, new technology and least-toxic approaches that could also help a farmer's bottom line.

In California, such strategies are feasible because DPR takes a comprehensive approach to air, water, endangered species and other environmental issues. Also critical to our approach is DPR's partnership with the County Agricultural Commissioners, our local enforcement agents. DPR is recognized nationally and internationally for our expertise in pesticide use and trends, human health and worker safety issues, and grants that foster safer, innovative pest management. In the pages that follow, read more about our initiatives, how they complement one another and how we plan to meet air quality goals and other environmental challenges ahead.



A four year legal battle challenging DPR's efforts to meet federal emission standards for ozone, under a state plan based on law and sound science, ended in mid 2008 when a federal appellate court panel unanimously ruled in our favor. An advocacy group had challenged our approach to reduce pesticide emissions and convinced a lower court to order DPR to require immediate restrictions on pesticide emissions that would have disrupted agriculture in Ventura County and the San Joaquin Valley. Once the appeals court overturned that order, in cooperation with the ARB, DPR moved immediately to modify the court ordered regulations to meet state and federal clean air goals and set a reasonable timetable that does not unnecessarily disrupt the economy. DPR held public hearings on the proposed rules in January 2009, with final regulations expected to follow shortly.



▶ ROSEMARY NEAL

Staff Environmental Scientist Air Protection Program

Rosemary Neal doesn't look like a detective, though her understated British accent is vaguely reminiscent of a fictional character named Holmes. In reality, Neal is a veteran environmental research scientist on the trail of an invisible, elusive, and hazardous quarry – VOCs, or volatile organic compounds. Her job: Estimate levels of these smog-causing pesticide emissions in specific regions of the state and calculate reductions needed to meet clean air rules. This complicated assignment involves integrating pesticide data with geographic information systems.

"I love tasks that require detective work. Although I have a scientific background, I am a geographer at heart and love to work with anything related to mapping or spatial relationships. I am a firm believer that better decisions can be made through mapping our world and visualizing relationships, connections and patterns in data, and I love opportunities to demonstrate that.

"I believe my work is important because our world faces a tremendous environmental crisis. Although my contribution toward understanding a complex environmental problem is small, it can be combined with other information to help implement the change we need."

PESTICIDE CONTAINER RECYCLING LAW EASES FARM BURDEN, HELPS ENVIRONMENT

Governor Schwarzenegger signed the nation's first pesticide container recycling law in September 2008 after DPR teamed up with the California Farm Bureau to push for the progressive initiative. The new law helps farmers deal with a longstanding disposal problem while providing a safe process that turns heavy-duty plastic containers into materials like fencing, pallets and marine pilings.

Senate Bill 1723, carried by Senator Abel Maldonado (R-Santa Maria) requires first sellers of agricultural and commercial pesticides to either participate in a recycling program or create their own program. DPR plans to propose regulations in 2009 designed to assure compliance and maintain a level playing field.

A similar federal initiative failed in 2008, despite warnings that voluntary efforts by industry could not handle recycling demands or fairly assess their costs to business. More than 80 million pounds of pesticide containers were recycled in California during the past 10 years, but a backlog kept growing and many farmers had no place to take their empty drums for processing.

After the Legislature passed the bill with strong support, DPR Director Mary-Ann Warmerdam commended the Farm Bureau for its help. "This is one of those cases where a formal, government-sanctioned recycling initiative is the only feasible alternative," said Warmerdam. "And it makes sense for government to get involved when growers want to do the right thing for the environment, but the market can't seem to serve them fairly and effectively."

GARLIC RESEARCH SMELLS LIKE SUCCESS

DPR strongly supports work to reduce the need for soil fumigants, highly toxic pesticides that also can contribute to the formation of smog. The search for alternatives will take an unusual turn in the spring of 2009 when an experimental project funded by DPR goes into its second season. This unique field study involves about 200 acres of garlic and onion plots at Tule Lake and in the San Joaquin Valley.

Our goal is to defeat a soil fungus that can lie dormant for 40 years before it reawakens to destroy garlic and onion bulbs. The so-called "white rot" has disrupted garlic production on more than 13,000 acres in California, prompting a shift of most production to China. Fighting the pest required highly toxic, very expensive fumigants that made commercial production unprofitable here. Now, a \$40,000 DPR grant is helping industry test a different approach: Trick the fungus into germinating with a compound that synthetically imitates the presence of garlic or onion bulbs. Absent a crop, the fungus then starves or is weakened.

The outlook is promising, said project technical manager Robert Ehn. "We know it works in small plots... Now the question is whether it will work commercially, and can we get growers to adopt it." And if the technique works for garlic, similar strategies may be developed for other crops that rely on pre-plant fumigation.



Helping urban residents do the right thing in their own front yards

Pesticide issues don't end at the farm fence line. DPR is putting more emphasis on urban and suburban environments. With our support, the San Luis Obispo (SLO) County Agricultural Commissioner's Office launched a pilot project to educate and license maintenance gardeners after inspections of local gardeners showed more than 80 percent were out of compliance with state licensing and pesticide safety requirements.

Surveys also showed that the urban residents who hire these gardeners had little knowledge of pesticide safety laws or the potential environmental impacts of improper pesticide use.

We know the misuse of pesticides in urban settings can lead to environmental and health problems.

SLO's surveys also showed that most gardeners were immigrants whose primary language was Spanish, and that the language barrier was a significant reason for noncompliance. Many did not know they needed DPR licenses. Maintenance gardeners typically mow lawns, do general yard cleanup and take care of ornamental plants and turf. They apply pesticides only occasionally. They typically do not have (or need) the knowledge of pesticides required for DPR's existing landscape maintenance license, which is intended for people whose primary business is pest management, not gardening.

In 2008, we developed a maintenance gardener study guide and exam in English and Spanish. To field-test the new materials, we approved a proposal from the SLO Agricultural Commissioner's Office to create an

outreach program for both gardeners and the residents who employ them.

Among other activities, the county produced and aired television and radio ads in English and Spanish to make people aware why they should hire licensed gardeners trained in pesticide safety. Continued county focus on maintenance gardener inspections will measure the success of the outreach, while encouraging compliance and fair business competition.

DPR has applied for federal grants to continue training and outreach efforts in SLO County in 2009 and 2010.

Based on what we learn from this pilot project, DPR can develop training and licensing programs for maintenance gardeners that ensures these workers know how to apply pesticides safely to protect themselves, public health and the environment.



▶ **LEILANI HANSEN**

**Senior Environmental Scientist
Pesticide Registration Branch**

Senior Environmental Scientist Leilani Hansen leads a team of scientists who evaluate and register pesticides for agricultural, home and garden use in California. She also manages the Pesticide Label Resource Center, the state's repository for pesticide labels. A 25-year veteran of the Registration Branch, Hansen previously worked as an agricultural biologist in Fresno, Madera and Sacramento counties.

Her background in local pesticide regulation – which included inspecting fields and packing houses, writing environmental reports and developing insect trapping programs – gives her a unique perspective on pest management and the evolution of pesticide regulation in California.

"In Registration, you can see the complete picture, how each DPR branch contributes its expertise toward our goal – to control pests without adverse impacts to people and the environment. Over the years, our registration process has promoted more stringent labeling and data requirements, better worker protection, effective environmental monitoring and the shift to low-risk pesticides. Our record shows we have provided for proper, safe and effective use of pesticides, advanced the production of food and fiber, and improved protection for public health and safety."

ALL NEW PRODUCTS MUST UNDERGO SCRUTINY, BUT DPR ENCOURAGES THE BEST

Through our registration process, DPR encourages the introduction of new, less-risky products. We promote a business climate that also favors our natural environment.

Streamlining registration

In 2006, passage of Assembly Bill 1011 streamlined the product registration process. It eliminated a requirement that had essentially forced DPR to be the arbiter of business disputes over use of scientific data to support new registrations. Such disputes could delay registration actions for years. The bill created a California data protection and cost-sharing system similar to the federal system. It has helped bring new, improved products into California more quickly, with potential savings for pesticide buyers while eliminating the need for DPR to evaluate duplicative data.

We also promised to track the progress of this new law and report on its impact. DPR completed its second report on the impacts of the new law in early 2009. The report indicated:

- The number of registration submissions that required scientific data evaluation dropped about 20 percent in three years since DPR no longer had to scrutinize duplicative data. In 2004, there had been 608 submissions; by 2007, that dropped to 484.
- In turn, our analysis found an overall decrease in the average time required to process a submission, from just over 91 days in 2004 to 67 days in 2007 – a 27 percent decrease.
- And when scientific evaluations were required, we were able to conduct those reviews more efficiently, and the average evaluation time dropped significantly.

While we will continue to assess the ultimate effects of streamlined registration as more statistics become available, the first results are positive.

Improving services

In 2007, DPR undertook a Stakeholder Outreach Project to improve our product registration process and, at the same time, advance health and environmental protection. We held discussions and meetings with more than 30 major commodity and chemical groups, as well as environmental and advocacy organizations. In August 2008, we announced our plans and priorities. The first steps include revamping the Registration Branch Web pages to make them more user-friendly and beefing up our outreach materials. By the end of 2009, we expect that online references to registration-exempt products, experimental use permits, research authorizations and other topics will be more accessible and understandable to the regulated community.

In 2009, Registration Branch staff also plan to start work on a Stakeholder Guidance Manual, a "bible" to help industry register, amend or renew licenses to sell pesticide products in California. The manual will be developed with help from an advisory panel of stakeholders.

Surface water protection focuses on pyrethroids

The ripple effect of an initiative DPR launched in 2006 continues to spread as we take a more comprehensive view of pesticides and water on the farm and in urban environments. Our major review of certain pesticides, based on monitoring that found water runoff was affecting small aquatic organisms, aims to learn how runoff occurs and then develop rules to prevent it.

Under DPR scrutiny are pyrethroids, insecticides favored in agriculture and in urban areas. By the end of 2008, nearly 700 products were under review, separated into three groups.

For the first group (about 7 percent of the products), we were almost finished receiving and reviewing environmental data by the end of 2008. A second group of products (about 1 percent) have limited uses and their manufacturers have agreed to put into place preventive steps we believe appropriate. For the third group of chemicals, we continue to assess offsite movement into waterways in agricultural and urban areas.

We're also working with pesticide makers to assess the impacts from two agricultural insecticides, chlorpyrifos and diazinon. Those efforts will help direct regulatory actions by DPR in cooperation with state and regional water authorities. For chlorpyrifos, we expect new data in mid-2009 will signal whether declining use has helped reduce concentrations in waterways. For diazinon, our scientists are evaluating data to show if controls during dormant-season applications are working as intended.

On another water front, DPR continues work on copper-based marine paints used on boat hulls. Based on monitoring data from 23 California marinas, our scientists in 2008 concluded these paints leach into marina waters and violate water standards. DPR's formal product reevaluation could take the products off the market. Meanwhile, we're working with the boating industry and water authorities to promote less-toxic alternatives and voluntary compliance.



OPPORTUNITY KNOCKS FOR WELL MONITORING

In 2008, DPR researchers knocked on about 200 doors around the state as part of our annual water well monitoring program. Since 1985, we've sampled more than 5,000 wells for more than 160 pesticides to protect Californians' drinking water.

DPR samples wells on private property and cooperation is voluntary. In 2008, DPR scientists produced a brochure, in English and Spanish, to better explain our program and invite cooperation. "People often aren't at home when we initially visit," said program coordinator Lisa Quagliaroli. "So we have something to leave at the door to explain what we're doing, and why it's important. These private drinking water wells are really the equivalent of the canary in the coal mine. Since we don't have our own monitoring wells, participation by private well owners is crucial to the success of our program."

There's no charge to property owners for testing, and results go into our well inventory database. It's part of a ground water regulatory program designed to prevent contamination before it occurs. Find more information at www.cdpr.ca.gov/docs/emon/ehap.htm