



**PESTICIDE REGISTRATION  
AND EVALUATION COMMITTEE (PREC)  
Meeting Minutes –January 15, 2016**

**Committee Members/Alternates in Attendance:**

Ann Prichard, Department of Pesticide Regulation (DPR)  
Charles Salocks, Office of Environmental Health Hazard Assessment (OEHHA)  
Crystal Reul-Chen, Department of Resources Recycling and Recovery (CalRecycle)  
Eric Lauritzen, California Agricultural Commissioners and Sealers Association (CACASA)  
Lynn Baker, Air Resources Board (ARB)  
Patti TenBrook, U.S. Environmental Protection Agency (EPA), Region 9 –via webcast  
Perry Poe, California Department of Food and Agriculture (CDFA)  
Rebecca Sisco, University of California, IR-4 Program  
Valerie Hanley, Department of Toxic Substances Control (DTSC)

**Visitors in Attendance:**

Anne Katten, California Rural Legal Assistance Foundation  
Brian Brett, Dow AgroSciences LLC  
James Nakashima, OEHHA  
Justine Weinberg, California Department of Public Health (CDPH)  
Rachel Kubiak, Western Plant Health Association  
Ruben Arroyo, CACASA

**DPR Staff in Attendance:**

Andi Cameron, Pesticide Registration Branch  
Craig Cassidy, Outreach and Public Engagement  
David Duncan, Environmental Monitoring Branch  
Denise Alder, Pesticide Registration Branch  
Jeanne Martin, Enforcement Branch  
Jesse Cuevas, Office of Legislation and Policy  
Jill Townzen, Office of Legislation and Policy  
Lisa Ross, Worker Health and Safety Branch  
Lucy Graham, Worker Health and Safety Branch  
Marylou Verder-Carlos, Pesticide Programs Division  
Michel Oriel, Worker Health and Safety Branch  
Nino Yanga, Worker Health and Safety Branch  
Pam Wofford, Environmental Monitoring Branch  
Susan McCarthy, Product Compliance Branch  
Yvette Nonato, Worker Health and Safety Branch



**1. Introductions and Committee Business –Ann Prichard, Chair, DPR**

About twenty-nine (29) people attended the meeting.

**2. Cholinesterase Test Results Reporting and the Medical Supervision Program (AB 1963) –Lucy Graham and Yvette Nonato, DPR**

Organophosphates and carbamates are pesticides that inhibit cholinesterase. Cholinesterase is an enzyme that breaks down acetylcholine. Acetylcholine is a neurotransmitter that is essential to the proper function of the nervous system. High exposures to organophosphates and carbamates inhibit cholinesterase from breaking down acetylcholine, resulting in acute symptoms of neurological poisoning. Symptoms of neurological poisoning include vomiting, diarrhea, and increased respiratory secretions.

Title 3 of the California Code of Regulations (3 CCR) §6728 and California Health and Safety Code §105206 gives authority to the Medical Supervision Program. Established in 1974, the Medical Supervision Program was designed to protect agricultural workers that regularly handling organophosphates and carbamates. The Medical Supervision Program includes medical supervisors, employers, employees, California Agricultural Commissioners (CAC), DPR, OEHHA, and CDPH. The Medical Supervision Program requires employers to hold a contract with a licensed physician to act as a medical supervisor. Employers with employees regularly handling Toxicity Category I and II organophosphate and carbamate pesticides must provide a copy of the contract to the local CAC. The term “regularly” is defined as employees who load, mix, or applies organophosphates or carbamates more than six days in a given thirty-day period. The medical supervisor establishes a baseline red blood cell (RBC) cholinesterase and plasma cholinesterase level before employees begin working with the pesticides. The medical supervisor performs periodic cholinesterase monitoring and makes recommendations based on test results.

**Figure 1. Action Levels of RBC and Plasma Cholinesterase and the Associated Actions Required Under the Program.**

<b>% Depression from Baseline</b>	<b>RBC Cholinesterase</b>	<b>Plasma Cholinesterase</b>
≥20%	Prompt retesting of employee and evaluation of work practices by employer	
≥30%	Immediate removal of employee from further exposure	--
≥40%	--	Immediate removal of employee from further exposure

Laboratories must be approved by CDPH, perform cholinesterase analysis as prescribed in 3 CCR §6728 and at a minimum must submit cholinesterase test results with predefined data elements to DPR on a monthly basis. There are currently six laboratories approved. OEHHA analyzed cholinesterase test results received from these laboratories in 2011-2013. In 2014, DPR inspected a select group of employers (growers) in areas of high organophosphates and

carbamates use and surveyed medical supervisors by mail. In 2015, OEHHA conducted in-person visits with medical supervisors.

DPR received 91,093 cholinesterase test results involving 18,039 unique individuals from the six laboratories in 2011-2013. Information on the “purpose of test” are often incomplete or not provided in the cholinesterase test results reports. To help with data analysis, OEHHA developed inferences and assumptions to identify individuals in the Program. These assumptions excluded individuals that did not have paired results (RBC and plasma), individuals whose employer’s do not apply pesticides to an agricultural commodity, individuals younger than 16, or individuals over 75 years old. After the exclusions, there were 58,064 paired cholinesterase test results involving 11,735 unique individuals. The information represented a good correlation between the number of test results and use. Of the medical supervisors who responded to survey, 51 percent were from central region. All of the inspected growers who had employees regularly handling organophosphates and carbamates were located in the central or southern region.

Over a 3-year period, 1,338 individuals were tested numerous times. Two approaches were used to investigate patterns of cholinesterase activity level and the frequency of cholinesterase depressions in these individuals. In Approach 1, baseline activity level was determined by averaging results from 2 tests taken 3-14 days apart and 663 of the 1,338 unique individuals that had a 14-day baseline. In Approach 2, the highest cholinesterase test result over the three-year period was used as baseline for the remaining 675 individuals, but there was an overestimation of the extent and frequency of cholinesterase depression.

The medical supervisors make recommendations based on the cholinesterase action levels and it is the employer’s responsibility to implement workplace recommendations. Under the Medical Supervision Program, 92 percent of growers had varying levels of awareness, 62 percent of growers retained use and employee records (required three years), 58 percent of growers kept copy of the agreement with medical supervisor, and 38 percent provided a copy of agreement to the CAC. This showed a majority of medical supervisors performed required activities and to a lesser extent, recommended activities. Of the medical supervisors, 56 percent knew their recommendations were being followed. On the laboratory test requisition forms, 51 percent of medical supervisors indicated the purpose of the test. Of those who did not indicate the purpose, the top two reasons given were they were not aware of this requirement or the term “purpose of test” was not on the preprinted requisition form.

Overall, the Medical Supervision Program appears effective in protecting agricultural workers handling organophosphates and carbamates. Most individuals identified as part of the Medical Supervision Program did not have depressed cholinesterase activity levels and cholinesterase activity levels recovered rapidly in those with a depression. Most medical supervisors who regularly ordered cholinesterase testing were aware of their responsibilities. Over half of the growers surveyed were familiar with the Medical Supervision Program, but had varying levels of understanding of specific requirements. Some issues with the Medical Supervision Program include: many cholinesterase tests reported were unrelated to the Medical Supervision Program, cholinesterase test results reports from the laboratories contain missing or incomplete data elements (e.g., purpose of test), and there is no accurate and complete list of medical supervisors.

DPR will continue evaluating the Medical Supervision Program and analyze cholinesterase test results in collaboration with OEHHA. DPR recommends transferring of reporting responsibility from laboratories to medical supervisors as this may improve reporting efficiency as well as outreach to employers, medical supervisors, laboratories, local health officers, and CACs. Additionally, DPR recommends developing a list of currently active medical supervisors while promoting and expanding medical supervision training, and conducting focused headquarters inspection of Pest Control Operators similar to those conducted with growers. DPR will coordinate with CDPH on outreach efforts to the laboratories and develop clear laboratory requisition slips requiring indication of the purpose of the cholinesterase test. The report is available on DPR's Web site at <http://www.cdpr.ca.gov/docs/legbills/reports/reg/regulatory.htm>.

### **3. Update on Volatile Organic Compound Emissions from Pesticides –Pam Wofford, DPR**

Volatile organic compounds (VOCs) and nitrogen oxides (NOx) react with sunlight to form the ozone. The state implementation plan (SIP) for California's Clean Air Act describes measures to reduce VOCs and NOx to achieve an ozone standard and requires DPR to develop and maintain an inventory to track pesticide VOC emissions in five nonattainment areas. Furthermore, this requires DPR to reduce pesticide emissions by specified amounts during May-October peak ozone season, require low-emitting fumigation methods, and implement restrictions on non-fumigant pesticides for the San Joaquin Valley.

“Low-emission” fumigation methods have been required during May-October ozone season in San Joaquin Valley, Southeast Desert, and Ventura nonattainment areas. The backup measure if trigger level (95 percent of the SIP goal) is exceeded is to limit fumigant VOC emissions. This is currently required in Ventura; however, San Joaquin Valley has different backup measure. DPR is also required to publish annual pesticide VOC emissions inventory report, including determination if trigger levels are exceeded. DPR is currently in the process of adding interim fumigation methods using totally impermeable film tarpaulins, reduced emission “strip” methods, removing language now present on revised fumigant labels, and clarifying language in regulation.

Certain high-VOC products used in San Joaquin Valley will require a pesticide dealer to provide information to purchasers and growers will be required to obtain a pest control adviser recommendation for some applications. Prohibition of several uses of high-VOC non-fumigant products is the backup measure if trigger level exceeded in San Joaquin Valley. These prohibitions were put into place in 2015 due to an exceedance in 2013. The restrictions will be placed on the use of high-VOC products containing abamectin, chlorpyrifos, gibberellins, or oxyfluorfen applied in San Joaquin Valley during May 1 through October 31 to alfalfa, cotton, walnuts, almonds, grapes, citrus, or pistachio.

The 2014 draft pesticide VOC emissions report complied with SIP goals in all nonattainment areas showed decreased emissions in San Joaquin Valley, Southeast Desert, Ventura, and South Coast with an increase in Sacramento Metro by 18 percent due to fumigant use. Prohibition of the use of high-VOC products in the San Joaquin Valley nonattainment areas began May 1, 2015

and will be in place until at least October 31, 2016. The ozone season occurs from May to October each year. The total emissions were below SIP goal by 1.410 tons per day.

There was an increase in the number of Pesticide Use Report records without a VOC fumigant method code, which resulted in an increase of the use of a default code. Emission potentials for products will change from a default value when DPR receives thermogravimetric analysis results. These changes in the assigned emission potential from a default value resulted in both decreased and increased values. This resulted in an estimated increase in 2013 by 1.242 tons per day mainly due to changes in emission potentials of fenprothiopyr and hexythiazox (now the fourth and fifth contributors to the inventory). Since DPR recalculates previous years, it did increase the estimated emissions for 2013. More information regarding the Air Monitoring Network can be found on DPR's Web site at [http://cdpr.ca.gov/docs/emon/airinit/air\\_network.htm](http://cdpr.ca.gov/docs/emon/airinit/air_network.htm). For questions, contact Environmental Program Manager I, Ms. Pam Wofford, at 916-324-4297 or by e-mail at [Pam.Wofford@cdpr.ca.gov](mailto:Pam.Wofford@cdpr.ca.gov).

#### **4. Registration Requirements for Products Made from Pesticide Impregnated Materials and Bearing Pesticide Claims –Jill Townzen, DPR**

California Food and Agricultural Code §12753 states, a pesticide is “any substance, or mixture of substances which is intended to be used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, as defined in Section 12754.5, which may infest or be detrimental to vegetation, man, animals, or households, or be present in any agricultural or nonagricultural environment whatsoever.” Pesticide impregnated materials bearing pesticidal claims for other than the protection of the article itself, whether an insect repellent or an antimicrobial are pesticides. Impregnated textiles currently fall into two categories: (1) insect repellents; and, (2) antifungal products. Presently, permethrin is the only active ingredient federally registered for use as an insect repellent in clothing and gear. Copper oxide is the only active ingredient federally registered for use as an antifungal in clothing and gear. Antifungal socks are currently the only antifungal impregnated materials registered for sale and use in California.

In the past, companies manufacturing the pesticide used to impregnate the textile/material and/or conducted the impregnation process obtained a federal registration for the impregnated material. Then, the companies obtained registration of the same product in California. The companies selling the impregnated textiles/materials into or within California were not required to register with DPR, as long as they obtained a Pesticide Broker License.

On December 10, 2015, DPR issued California Notice 2015-13 informing stakeholders that effective November 1, 2016, individual companies intending to sell or distribute in California pesticide impregnated products bearing pesticidal claims for other than the protection of the article itself, under their own brand name/company label, will need to obtain an apparel or non-apparel categorical registration from DPR. Each brand name or alternate brand name must be registered with DPR. Apparel must be registered separately from non-apparel. Efficacy evaluation may vary due to the impregnated material. Products with different U.S. EPA registration numbers must be registered separately, which includes products with different active

ingredients, amounts of active ingredient, and inert ingredients. Current registrants may continue to register pesticide-impregnated products bearing pesticidal claims for other than the protection of the article itself in California.

This change will facilitate DPR's ability to track the use of these products in California and to understand potential impacts on water quality and human health. It is also consistent with DPR handling other types of currently registered pesticide impregnated products (e.g., pet collars, product packaging, water filters, and disinfecting wipes). More information regarding Registration Requirements for Products Made from Pesticide Impregnated Materials and Bearing Pesticide Claims can be found on DPR's Web site at <http://cdpr.ca.gov/docs/registration/canot/2015/ca2015-13.pdf>. For questions, contact Senior Environmental Scientist (Specialist), Dr. Jill Townzen, at 916-445-7230 or by e-mail at [Jill.Townzen@cdpr.ca.gov](mailto:Jill.Townzen@cdpr.ca.gov).

##### **5. Committee Comment**

Lyn Baker inquired if DPR is waiting for legislature to continue and modify evaluation of the Medical Supervision Program. Jesse Cuevas stated DPR's report was submitted to the legislature at the end of December 2015 and DPR is waiting for legislative review.

Rebecca Sisco questioned if the test results represented symptoms from individuals. Lucy Graham stated the test results are based on the information provided from laboratories. DPR does not have symptom information.

James Seiber inquired if DPR is able to compare results from ten years ago. Lisa Ross stated the cholinesterase monitoring started in 2011 and there are no prior test results. However, DPR monitors pesticide illness reports and organophosphate and carbamate illness reports are declining.

Valerie Hanley questioned was the percent of growers aware of the program compliant with the program. Lucy Graham stated this is correct.

Valerie Hanley inquired how the SIP goals are determined. Pam Wofford stated the SIP goals are based on a 20 percent reduction from the 1990 baseline except for the San Joaquin area, which is based on a 12 percent reduction.

Lyn Baker asked if the reduction in the San Joaquin Valley in 2013-2014 could be due to the drought. Pam Wofford stated the reduction could be from the drought, pest pressures, etc. Lyn Baker further inquired if there have been discussions with U.S. EPA and ARB in regards to the new U.S. EPA ozone standards. Pam Wofford stated no.

Crystal Reul-Chen asked if DPR is tracking increases in crops by area. Pam Wofford stated DPR tracks pesticide use by crop.

James Seiber inquired if there was a reduction in methyl bromide use. Pam Wofford stated there is a reduction in methyl bromide. The last year methyl bromide can be used as a pre-plant

fumigation for strawberries is 2016. Methyl bromide will still be allowed for use on commodities.

Charles Salocks asked if DPR factors in the reactivity of the compound in VOC emissions. Pam Wofford stated DPR has considered factoring in the reactivity. However, DPR's emissions inventory is related to pesticide use. Lyn Baker stated there are compounds that have been exempted as VOCs and methyl bromide could fit the criteria due to low reactivity. U.S. EPA has not exempted methyl bromide.

Lyn Baker inquired if the new impregnated material registration requirements applied to online sales. Jill Townzen stated yes.

Valerie Hanley asked if DPR has collaborated with DTSC's Safer Consumer Products Program. Ann Prichard stated she is not aware of the program.

Crystal Reul-Chen inquired if formaldehyde used in products to prevent mold would be considered a treated article. Ann Prichard stated the treated article exemption is a federal exemption. When a pesticide is used to protect the product, it is federally exempted. Valerie Hanley commented all of these products could fall under DTSC's Safer Consumer Products Program.

Charles Salocks asked if nanosilver used in socks is considered a "treated article." Ann Prichard stated if the product labeling states the nanosilver is intended to protect the socks and uses the limited language outlined by federal requirements, the product might be exempt from federal and state registration as a "treated article." If the product labeling states the nanosilver protects the wearer from athlete's foot, then the product is not a "treated article" and requires registration with both U.S. EPA and DPR.

Crystal Reul-Chen inquired if treated articles under the treated article exemption are required to be labeled. U.S. EPA's Pesticide Registration Notice 2000-1 identifies acceptable and unacceptable label wording for treated articles exempt from registration.

James Seiber asked if there is any no-pest strips registered in California. Charles Salocks stated no-pest strips were available at Home Depot a year ago.

## **6. Public Comment**

James Nakashima inquired if DPR had any commentary as to why cholinesterase test results reports were not largely received from Northern California. Charles Salocks commented it seems the employers are managing the employees so there is no mandated retesting (i.e., the employees are not handling the pesticides more than six days in a thirty day period). It is important to note not all employers had all records.

Anne Katten inquired if there was compliance or enforcement actions taken when growers did not have the required documentation. Nino Yanga stated the DPR's Enforcement Branch conducted these inspections so they would have taken corrective action. Anne Katten further

inquired when the inspections for the commercial applications would start. Nino Yanga stated this was one of the recommendations of the Medical Supervision Program and DPR hopes to start inspections next year.

Rachel Kubiak asked if there is a current registration or certification program for medical supervisors. Charles Salocks stated the medical supervisors register with the CAC and each CAC holds different records. OEHHA is currently trying to establish a firm list of medical supervisors. Rachel Kubiak further asked if a medical supervisor registration program is an option. Charles Salocks stated OEHHA is considering a registration option.

Brian Bret asked if DPR would be changing the top active ingredients subject to restrictions based on the new thermogravimetric analysis data available and the new top contributor ranking. Pam Wofford stated DPR would most likely add more active ingredients to the high-VOC restrictions. Brian Bret further asked if the decrease for 2014 in San Joaquin Valley would remove restrictions. Pam Wofford stated the restrictions were not implemented in 2014 and will be in place for 2015 and 2016. Due to the two-year lag in the Pesticide Use Reports, restrictions are implemented for two years.

Justine Weinberg inquired if there is monitoring data to confirm the emissions data. Pam Wofford stated the emissions data is solely based on pesticide use and the VOC content.

## **7. Agenda Items for Next Meeting**

The next meeting will discuss changes to the Air Monitoring Network.

The next meeting is scheduled for Friday, March 18, 2016 at 10:00 a.m. in the Sierra Hearing Room on the second floor of the Cal/EPA building, located at 1001 I Street, Sacramento, California.

## **8. Adjourn**