



**PESTICIDE REGISTRATION
AND EVALUATION COMMITTEE (PREC)
Meeting Minutes – July 21, 2023**

Committee Members/Alternates in Attendance:

Fabiola Estrada – U.S. Environmental Protection Agency (EPA), Region 9
Garrett Keating – Department of Industrial Relations (DIR)
Heather Williams – Department of Resources Recycling and Recovery (CalRecycle)
Krista Hoffmann – Department of Fish and Wildlife (DFW)
Katherine Sutherland-Ashley – Office of Environmental Health Hazard Assessment (OEHHA)
Kari Arnold – University of California (UC), Davis, IR-4 Program
Kevi Mace – California Department of Food and Agriculture (CDFA)
Lynn Baker – Air Resources Board (ARB)
Mai Ngo – Department of Toxic Substances Control (DTSC)
Matt Hengel – University of California (UC), Davis, IR-4 Program and Environmental Toxicology
Tom Ineichen – Structural Pest Control Board (SPCB)
Tulio Macedo – Department of Pesticide Regulation (DPR)

Visitors in Attendance:

Note: Only attendees who identified themselves using their full name are listed below

Anne Katten – California Rural Legal Assistance Foundation
Bill Allayaud
Christabelle Parnanthu
Davis Daiker
Emily Saad – Exponent
James Nakashima – Office of Environmental Health Hazard Assessment (OEHHA)
Jane Sellen – Californians for Pesticide Reform
Jayne Walz – Helena Agri-Enterprises LLC
Justine Weinberg – Department of Public Health (CDPH)
Karen Da Silva
Karina Castro
Kevin Graulich
Marcia Trostle
Melissa Koshlaychuk
Michael Zeiss – Californians for Pesticide Reform
Nicole Russell
Ouahiba Laribi - Office of Environmental Health Hazard Assessment (OEHHA)
Paula Kahn
Sean Runyon
Seobin Moon

Steve Bennett
Taylor Roschen
Vicki Ghaffarzadeh

DPR Staff in Attendance:

Aisha Iqbal – Pesticide Registration Branch
Alyssa Freeman – Pesticide Registration Branch
Andrew Rubin – Human Health Assessment Branch
Andrew Turcotte – Pesticide Registration Branch
Aron Lindgren – Pesticide Registration Branch
Brenna McNabb – Pesticide Registration Branch
Christine Herrera – Worker Health and Safety Branch
Erik Kwok – Human Health Assessment Branch
JT Teerlink – Pesticide Programs Division
Justin Kroes – Environmental Monitoring Branch
Maziar Kandelous - Environmental Monitoring Branch
Michel Oriel – Human Health Assessment Branch
Minh Pham – Environmental Monitoring Branch
Randy Segawa - Environmental Monitoring Branch
Shelley DuTeaux – Human Health Assessment Branch
Taylor Whitehill – Pesticide Registration Branch
Yvan Delgado – Environmental Monitoring Branch

1. Introductions and Committee Business – Tulio Macedo, Chair, DPR

- a. Approximately 49 people attended the meeting.
- b. Certification and training regulations approved by Office of Administrative Law and filed with Secretary of State on June 30, 2023. Regulations will go into effect on January 1, 2024.

2. Developing DPR's Sustainable Pest Management Prioritization Process – Jennifer Teerlink, DPR

Sustainable Pest Management is a holistic approach to pest management envisioned to protect people and the environment. Increasing pest pressures due to climate change and the need to consider broader environmental, health, and social equity impacts to exposure of higher risk pesticides. We are looking to develop a systemwide approach and expand adoption of Integrated Pest Management (IPM) in agricultural and non-agricultural urban settings.

The Sustainable Pest Management Roadmap for California was created by a diverse, cross-sector workgroup convened by California Environmental Protection Agency (CalEPA), Department of Pesticide Regulation (DPR), and California Department of Food and Agriculture (CDFA). A two-year collaborative process to understand and address the challenges of balancing sustainable food production and health and environmental protection. The Roadmap builds on existing IPM

and land stewardship practice. Released in January, the Roadmap recommends a course of action to accelerate a systemwide transition to sustainable pest management.

Several Keystone Actions are identified in the Roadmap. Keystone Action D – Improve California’s pesticide registration processes and bring alternative products to market. This keystone has a short timeline. Registration and continuous reevaluation activities are the scope of effort. In a typical year DPR receives over 5,000 submissions, around 4,400 are associated with registration actions. It is critical for the Roadmap to improve timelines to get alternative products to market. In June DPR published annual report of product registration timelines and added information for programs specific review. This is a first step in improving transparency and predictability. DPR will continue to refine annual report moving forward, and continual refining of processes and communicating changes within the Registration Branch. On the scientific review side: Evaluation, Environmental Monitoring and Human Health Assessment also look for way to refine the process. There have been department-wide discussions on what to do with the current resources. Lots of product development with safer alternatives, and we are focusing on getting them to market while maintaining rigorous scientific reviews to ensure protection for human health and environment.

The Staff-Generated Candidate List of Potential Priorities builds on current existing efforts with data driven prioritization. For the data driven prioritization to create a rank scoring for different pesticides the following is needed: transparency, reproducible, rapid, flexible. Human Health as well as aquatic organisms, pollinators, and terrestrial organisms need to be considered with data driven prioritization. There has been lots of work completed so far on human health and aquatic organisms. DPR is building on environmental monitoring surface water protection modeling tool to prioritize monitoring efforts relative to pesticide usage across California. This tool helps prioritize development of analytical methods used for pesticides that are combination highest use and most toxic to aquatic organisms. DPR is early in development of similar tools for pollinators and terrestrial organisms.

As part of the refinement process from the data driven prioritization the highest ranking will be taken and provided additional context on the scope of recommendation. Refinement questions - What are registered uses for an active ingredient? What are exposure pathways of concern (e.g., human health, pollinators)? What uses are within the scope of the concern? For example - use sites, will it be used near aquatic sites that could put aquatic organisms at risk.(e.g., exclude baits) Are there alternative products? Is there readily available data: Monitoring data, DPR pesticide illness surveillance program (PISP), Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) 6(a)2 adverse effects data, EPA Registration Eligibility Decisions. This is just some of the considerations, not an all-inclusive list. And this is not a scientific evaluation, more a pooling of information to make a plan to move forward.

After gathering the data and information, a scientific advisory committee would review and have dialogue. The next step would be to state proposed priorities and action plans: Detailed scientific evaluation if a Human Health Assessment or environmental impact study is needed. Reevaluation (missing data) can request data to fill the gaps. Signal need for alternative research

for critical use, and link to registration expedite for alternatives to make it to market quicker, and mitigation/cancellation.

Next Steps – continue broad stakeholder engagement and consider input on prioritization of Roadmap actions. Develop plan, funding mechanisms, and programs to support the transition to SPM. Budget change proposal funding for adding new registration, reevaluation and SPM leadership positions to support priority Roadmap actions and to conduct fumigant alternatives study. Award DPR IPM research and alliance grants and CDFA grants.

Committee Comment

Matt Hengl asked if there was input needed from the IR-4 Program? JT Teerlink responded that yes, she has had some conversations with IR-4 staff and looks to continue collaboration in the process.

Lynn Baker- Thanked for the presentation.

Public Comment

Suzanne Hume from CleanEarth4Kids.org asked Why not ban all pesticides that are currently banned in the EU? A UCLA study showed 13 agricultural pesticides increased children's cancer up to 2.5 miles away. Between DPR and the EPA, only 6 of those are Restricted Use. But 11 of the 13 are banned or not approved in other countries and 10 of them are banned in the EU. JT responded DPR is an independent regulatory program and will continue to examine with EPA. DPR looks forward to examining other chemicals through the process.

Mike Ziess from Californians for Pesticide Reform asked concerning the difference between mitigation and the Roadmap. Will DPR continue to mitigate pesticides that risk assessments were already completed on, or will DPR pause action while working on the Roadmap? JT responded that DPR's current efforts do not stop while the Roadmap is being developed. The presentation is meant to show what is being built upon the current efforts. Mike continued with a final question how are high risk pesticides will be defined? Cancer risk vs cheap and effective pesticide? Will public and applicators have say in developing the criteria, will science based be enough? JT responded that the Roadmap is using many lenses to look at the process and ensure scientific review and human health concerns. DPR is looking at creating pathways for safe alternative products to come to market.

Darren Van Steenwyk asked what is the timeline that DPR is operating under for this? JT answered no specifics yet, but the goal as outlined in the Roadmap is to have the Advisory Committee set up by 2024.

3. Prioritizing Pesticides for Human Health Risk Assessment – Andrew Rubin, DPR

A new process for prioritizing pesticide active ingredients (AI) for human health risk assessment was presented. Effective prioritization for risk assessment will enable DPR to efficiently focus efforts on the riskiest of AIs, thus ensuring fulfillment of its mandate to protect the health of the occupational and general public.

The new process satisfies three general goals. Goal One is to align risk assessment prioritization with the larger objectives of the Sustainable Pest Management (SPM) roadmap. Goal Two is to be responsive to the recommendations from the National Academy of Sciences in its 2015 audit of DPR risk assessment practices. And Goal Three is to incorporate best practices for prioritizing chemicals according to their potential human health impacts.

An effective prioritization process must adhere to four specific requirements: (1) It should be transparent with respect to the selection of input parameters and approaches to scoring. This will allow inputs to be clear and easily understood by stakeholders. (2) It should be reproducible. Rank-scoring must be easily reproduced and largely independent of qualitative professional judgment and the individuals involved in the decision making process. (3) It should be rapid, with inputs readily identifiable within DPR databases and other recognized sources. This will allow for the simultaneous ranking of many AIs. (4) It should be sufficiently flexible to be responsive to new data, new inputs, and revised scoring methods.

The new process will start with a list of registered conventional pesticides. New soil fumigants will not be included on this list, as they will be immediately prioritized for risk assessment (sometimes before registration) by virtue of their high toxicity and exposure potential. Other AIs excluded from the initial list will include those with reduced Federal Insecticide, Fungicide and Rodenticide (FIFRA) data requirements for registration (microbial pest control agents, biologicals, and biochemicals), and AIs not approved for registration. Rank-scoring will be carried out with conventional chemicals registered for use in California. After rank-scoring there may be a need for further refinement. For example, such a need would arise when two chemicals receive the same high rank scores for risk assessment. After SPM Advisory Committee and public input, DPR will initiate human health risk assessments on the highest prioritized chemicals.

Many approaches to prioritization have been considered. These include (1) hazard binning, which was rejected because it did not include exposure parameters; (2) risk based approaches, which were rejected because they require more precise exposure estimation, a process that is not practical at the prioritization phase; (3) a statistically based approach (logistic regression) using hazard and exposure characteristics, rejected because, while mathematically sound, transparency was lacking; and (4) an “additive hazard and exposure characteristics approach” (shortened to an “additive approach”), which was ultimately adopted because it fulfills the requisite characteristics outlined above (i.e., transparent, reproducible, rapid, and flexible).

Development of a rank-score methodology using the additive approach was dependent on creation of a rank-scoring process through which hazard and exposure parameters are processed. The hazard input parameters include acute toxicity (magnitude of lethal dose through oral, dermal, and inhalation studies in rats), chronic oral toxicity (magnitude of the no-effect level in a FIFRA-guideline oral toxicity study), developmental toxicity (including developmental neurotoxicity), reproductive toxicity, oncogenicity, and neurotoxicity. Scoring for the continuous input parameters (acute and chronic toxicity) is based on a 1 (lowest risk) - 4 (highest risk) graded system. Scoring for the dichotomous parameters is either 0 (not present) or 4 (present).

The exposure input parameters include the 5-year average use rates or sales rates (proxies for general exposure, expressed in pounds per year), the multivariate leaching value (a proxy for drinking water exposure calculated by DPR's Environmental Monitoring Branch), vapor pressure (a proxy for inhalation exposure; the higher the vapor pressure the more likely it is a gas under atmospheric conditions), Resident Exposure Joint Venture (REJV) listing (a proxy for consumer / child exposure, REJV is an industry led effort coordinated through the US EPA to identify AIs that appear in products available to the general public), and approved food uses (a proxy for dietary consumption).

Evaluating the rank-scoring methodology used by the additive approach. A database was created containing input parameters for 90 AIs. Complete input data were available for 68 of those 90 AIs, which were then processed using the additive program. The results indicated that the top 10 scorers were almost all categorized as "high priority" chemicals according to the previous prioritization process used by DPR. While the additive score of an AI may seem arbitrary or untethered, the meaning crystallizes in the context of scores generated for other AIs. For example, carbaryl, which was previously categorized as "high priority", exhibited an additive score of 28 out of a possible 48, while fenhexamid, previously categorized as "low priority", scored 7 out of a maximum possible of 48.

Do any of the input parameters dominate the rank-scoring, and are any irrelevant? To examine this question, the database of 68 AIs with complete input data were grouped 3 ways: (1) the 22 top scorers, (2) the 24 middle scorers, (3) and the 22 bottom scorers. Mean scores were calculated for each input parameter, thus creating a profile of what an average high scoring, middle scoring, and low scoring chemical might look like. For the top 22 AIs (i.e., those more likely to be prioritized for risk assessment), no particular parameter dominated the scoring, though oncogenicity, chronic toxicity, and use scores had the highest influence on the total scores. Those data showed that no parameter could be automatically excluded from the process. In essence, all parameters were necessary to a valid combined score.

Post Ranking Considerations: After rank-scoring, DPR will likely be faced with the problem of resolving ties. Moreover, there may be other issues that arise as the high-scoring chemicals are evaluated in conjunction with priorities generated by the SPM roadmap. In order to resolve these issues, other parameters or information contributing to a more refined weight of evidence will be considered to inform prioritization decision making. These might include endocrine disruptor status (USEPA-EDSTAC listing), adverse effects listings reported to DPR's Pesticide Illness

Surveillance Program or similar federal programs, epidemiologic data emerging from the public health literature, and/or other considerations that could influence conceptions of potential for human health impacts.

The next steps in the process of implementing the new prioritization process will include finalizing a draft guidance document, obtaining internal and external scientific review of the guidance, and launch of the new process.

Committee Comment

Lynn Baker asked how will you handle something with weak oncogenicity data as opposed to something with strong/convincing oncogenicity data? Andy Rubin responded that, for purposes of prioritization, any chemical found to induce tumors in guideline studies will be scored equivalently.

Lynn followed up with: When relying on inhalation exposure being indicated by a vapor pressure proxy: What about something applied as particulate or wettable powder where vapor pressure might not account for the generation of inhalable small particles or water droplets containing bound pesticides? Andy responded to the effect that there has been much discussion surrounding this point within the prioritization workgroup. He agrees that it is possible that inhalable particulates associated with low-vapor-pressure AIs may escape notice in this system, but it is very difficult to track this possibility in a prioritization process. Shelley DuTeaux added that what was presented represents a prioritization process, which is separate from risk determination. Refinements such as these would be analyzed during human health risk and exposure assessment (including appropriate exposure scenarios for handler or bystander risk). Lynn added his concern that there are chemicals that may not score highly, but certainly pose risks, paraquat being a prominent example. Shelley responded that risk assessment represents just one avenue for consideration. DPR has other actions to reduce the impacts of priority pesticides, including reevaluation, additional mitigation actions, regulation, or even cancellation.

Garret Keating – When comparing the statistical methodology with the rankings created by the additive system, how did they line up? In particular, with developmental or neurotoxins that might not land high in the queue, would statistical assessment rank them higher? Andy responded that DPR spent over two years comparing rankings using various algorithms and statistical approaches. There will always be some differences in ranking between algorithms, but we expect that the additive system will capture the great majority of those AIs posing the greatest health risks.

Krista Hoffman suggested that categorical inputs could be converted to continuous inputs if greater distinguishability is required in the rank-scoring process. Further, she asked if inert ingredients will be considered during prioritization. Andy responded that the new prioritization process is focused on active ingredients. As such, inert components in specific formulations that might affect hazard or exposure will be taken up during the scoping and risk assessment phases. Shelley added that, similar to US EPA, DPR risk assessments are focused on AIs, not on inerts.

AI data are submitted and evaluated during the registration and label amendment phases, as well. Rapid assessment is done for any changes that could potentially increase exposures to applicators. DPR risk assessments capture the worst-case scenarios indicated by label use information. As to the first question, Shelley reminded the audience that there will be both internal and external scientific review of the prioritization proposal and that it is very possible that suggestions will be forthcoming concerning the input parameters at that time. Krista had a further question regarding whether adjuvants would be included in process assessments. Shelley responded that there is another process currently underway at DPR that is examining adjuvants and drafting rule making language.

Public Comment

Mike Zeiss submitted questions by email and was sent by email the following:

“Question #1- It’s already been almost two years. Can you commit to a date by which the prioritization process will be completed, and DPR will announce its list of priority pesticides for risk assessment? If you cannot commit to a completion date, why not?”

DPR Response: We are in the process of finalizing the guidance document for the prioritization process and expect to proceed with scientific review promptly. We do expect the report and process to be finalized before the Sustainable Pest Management (SPM) priority pesticides process is fully developed. We communicate on our efforts and will not wait for SPM Advisory Committee as we continue our work on risk assessments and mitigation. We are looking forward to public input and SPM Advisory Committee input on priority pesticides.

“Question #2 – I’m concerned that your exposure parameters, especially REVJ and pesticide use and sales, emphasize the total number of Californians exposed, at the expense of those most at risk: handlers and fieldworkers. If you are making a pesticide application, or working next to a treated field, you are at risk from a single application. It doesn’t matter how many other applications there were somewhere else within California. My question is, how will DPR ensure that exposure to handlers and fieldworkers is properly prioritized?”

DPR Response: DPR went to great lengths to design input parameters from both the hazard and exposure perspectives that favored a prioritization process that is transparent, rapid, reproducible, and flexible. We are confident that the proposed paradigm will prioritize those legacy pesticides that pose the greatest potential risk to Californians in general. That said, a more robust exposure assessment would be needed to effectively identify those specific subpopulations at greatest risk for health impacts.

“Question #3 - Like me, I’m sure you were disturbed by USEPA’s recent announcement that the commonly-used herbicide DCPA poses a threat to developing fetuses in pregnant women. This was especially disturbing because DCPA was not included in any of DPR’s recent public prioritizations. I’m sorry to put you on the spot, but I think it has to be asked: if your new

prioritization approach was in place, would it have been successful in flagging DCPA as a high priority?”

DPR Response - Human Health Assessment (HHA) conducted a drinking water risk analysis as part of the recent dacthal (often shortened to DCPA) [Pesticide Contamination Prevention Act process](http://www.cdpr.ca.gov/docs/whs/active_ingredient/dacthal.htm) <www.cdpr.ca.gov/docs/whs/active_ingredient/dacthal.htm>. DPR just completed independent review of the registrant-submitted comparative thyroid assay test and the United States Environmental Protection Agency's (U.S. EPA's) own review published in the recent Data Evaluation Report. Our executive team is aware of the study, and in communication with U.S. EPA on their efforts.

4. Air Monitoring Network Annual Report Update – Maziar Kandelous and Yvan Delgado, DPR

California Department of Pesticide Regulation currently monitors air to assess exposures and risks, evaluate long term trends and determine whether current mitigations are working as expected. The Air Monitoring Network (AMN) has 4 sampling sites (Oxnard, Santa Maria, Shafter and Watsonville). The sites monitor 40 chemicals. In April 2022 there were 4 new chemicals added: Captan, Fenpyroximate, Methomyl, and Pendimethalin. DPR is working on determining the screening levels for the 4 chemicals. The report time frame is January 1, 2022 – December 31, 2022. For Study 309 there are 2 sampling sites in Delhi and Parlier for 1,3-D. The report timeframe is January 1, 2022- December 31, 2022.

Screening levels and Regulatory Targets – DPR estimates the potential for adverse health effects by comparing the air concentrations to health screening levels or regulatory targets. Screening levels (SL) are based on a preliminary assessment of possible health effects. A measured concentration that is above the SL does not necessarily indicate a health concern, but it does indicate the need for a refined evaluation and possible mitigation. Mitigation and regulatory action are informed by monitoring results, along with other data collected by the department. Regulatory targets (RT) are established after a formal risk assessment of chemical's toxicity and potential exposure and supersede SL. DPR puts measures in place based on RT to limit exposures and avoid adverse effects. A measured concentration that is above the RT does not necessarily indicate an adverse effect has occurred, but it does indicate that restrictions on the pesticide use may be necessary or modified if already existed. Four of the pesticides monitored in the AMN (chloropicrin, methyl bromide (MeBr), methyl isothiocyanate (MITC), and 1,3-D) have regulatory targets for one or more exposure periods. 1.17.03

Detection Levels- Three terms used to describe detections -Quantifiable detections refer to pesticide concentrations above the limit of quantification. Trace detections refer to pesticide concentrations below the limit of quantification but above the method detection limit. Non-Detect (ND) below the method detection limit. Quantifiable detections refer to pesticide concentration above the limit of quantification. Screening level indicates the need for a refine evaluation.

Air Monitoring Network (AMN) 2022 Results - In 2022, DPR staff monitored ambient air in 4 communities located in 4 counties: Watsonville in Santa Cruz County, Shafter in Kern County, Santa Maria in Santa Barbara County, and Oxnard in Ventura County. The results of the air monitoring were 13 pesticides detected at quantifiable levels, 6 pesticides detected at trace levels, and 21 pesticides were not detected.

Pesticide Detections and percentage by Location as Individual samples - Santa Maria had the highest quantifiable or trace detections with 191 or 10% of 1971 samples analyzed. Less than 5% quantifiable detections across the 4 communities. Number of Quantifiable Detections at each location. For example, Shafter had 50% of the quantifiable detections for Methyl Bromide, which means 50% were trace detections. Highest Measured Concentrations (parts per billion - ppb) and Percent of Screening levels. All acute (24 hour) levels of pesticides were 1% or less than screening levels of regulatory targets set by DPR. Sub chronic (4 week) levels- the highest was 34% Chloropicrin, while the rest was 10% or less. Chronic (1 year) all pesticide concentration was 18% or less. Highest Acute (24 Hour) Concentrations and SL% by Location- All levels were less than 1%. Highest Sub chronic Concentrations – Chloropicrin shows a 13-week average, while other pesticides are a 4-week average. Chloropicrin had a 34% in Oxnard, 33% in Santa Maria, trace in Shafter, and 27% in Watsonville.

Organophosphate cumulative exposures – Organophosphates are a class of chemical compounds that can cause adverse health effects on humans, such as inhibiting cholinesterase, an enzyme in the nervous system. Cumulative exposures are calculated for 15 organophosphate pesticides included in the AMN – Acephate, Bensulide, Chloropyrifos + its oxygen analog (OA), DDVP, DEF, Diazinon +OA, Dimethoate +OA, Methidathion, Malathion + OA, Oxydemeton Methyl, and Phosmet. Cumulative exposure was estimated using a Hazard Quotient (HQ) for each pesticide. HQ equals Air concentration detected divided by screening level. All HQ's were added to determine a Hazard Index (HI) value at each monitoring site. A HI greater than 1 suggests further evaluation. All 4 communities had Hazard Indices: Acute, Sub-Chronic, and Chronic for 2022 of less than 0.1.

Cancer risk estimates: Lifetime Exposure- Cancer Risk is the probability of an additional case of cancer over a 70-year period. Cancer risk is calculated by a formula of the normalized breathing rate of a human adult (nBR) multiplied by the mean lifetime (70 years) air concentration (LAC) times the cancer potency factor in humans (CPF). AMN program monitors six pesticides that are designated as known or probable carcinogens: 1,3-D, chlorothalonil, DDVP, diuron, iprodione, and propargite. 1,3-D and DDVP were detected in 2022. DPR has established a cancer risk regulatory goal of 1.00E05. The default breathing rate of an adult is 0.28 (m³/kg/day). In the absence of 70-year monitoring data, LAC is the pesticide's historic average concentration. The cancer potency factor in humans is determined by DPR to be 0.014 (mg/kg/day)⁻¹ for 1,3-D and for DDVP it is 0.350 (mg/kg/day)⁻¹. The Cancer Risk percentage threshold for DDVP was less than 5% for the 4 communities.

1,3-D Ambient Air Monitoring 2022 Results- 4 AMN communities plus 2 other sites Delhi and Parlier. 1,3-D was detected in 2018 at levels that indicated the need for mitigation. Specific

concerns in data recorded at Parlier and Shafter air monitoring stations. DPR proposed new residential bystander regulations to reduce potential exposure to 1,3-D in November 2022. DPR anticipates the final regulations will be effective January 1, 2024. Through a separate process, DPR is working with the Office of Environmental Health Hazard Assessment to develop new regulations specifically focused on protecting people working near 1,3-D applications. Future mitigation and regulatory actions to protect human health and the environment will be informed by closely reviewed monitoring results, other data, and research.

The 2022 1,3-D locations: Schendel Elementary School (Delhi), UC Kearney Agricultural Research Center (Parlier), Rio Mesa High School (Oxnard), Bonita Elementary School (Santa Maria), Sequoia Elementary School (Shafter), and Ohlone Elementary School (Watsonville). 1,3-D Study #309 Background: Objectives- Monitor 1,3-D in high use-areas of the Central Valley and evaluate the effectiveness of revised 1,3-D mitigation measures implemented in 2017. Monitoring locations were selected by ranking communities in Fresno and Merced Counties based on historical use within 5 miles of the community during 2012 - 2014. The sites selected were Delhi in Merced County and Parlier in Fresno County. Monitoring began in December 2016 at both sampling locations. One in 24-hour air sample collected per site per week on a randomly selected day.

The 2022 1,3-D Ambient Air Monitoring Results- Percent of quantifiable detections varied from 14% Oxnard to 73% in Parlier. Percent of quantifiable detections based on number of samples analyzed. 2022 1,3-D Maximum acute, sub-chronic, and chronic concentration, screening levels are 55ppb for acute exposure – DPR compared the highest 24-hour sample for the percentage and all sites were below the acute screening level. 3 ppb for sub-chronic – DPR bases on the highest 90-day concentration for the year concentration – all were below the screening level, and 2 ppb for chronic exposure – DPR calculates on the annual average - all sites were below the screening level. Cancer risk estimate per site 1,3-Dichloropropene- Delhi, Oxnard, Santa Maria, and Watsonville are all below the Cancer risk threshold, while Parlier and Shafter are above. Using the Cancer Risk formula, the LAC can be found for 1,3-D at 0.56ppb. Average monitored concentration for the 6 communities, comparing to the LAC of 0.56ppb, shows that Parlier has the highest at 1.10ppb, and Shafter is close to LAC at 0.46ppb. While comparing the data from 2011 to 2022, the Chronic screening level in Parlier was exceeded only once in 2018 at 2.94ppb.

Summary of AMN – 13 Pesticides were detected at quantifiable levels, 6 were detected at trace levels and 21 pesticides were not detected. None were detected at screening or target levels. Chloropicrin, DDVP, methyl bromide, and MITC were detected in all 4 monitoring sites. Hazard Indices for organophosphates were less than 0.1 in all sampling locations. Cancer risk percentage for DDVP were 4% or less in all sampling locations. Acute, Sub-chronic and Chronic SL and RT were not exceeded for any pesticides. Summary of study 309 - DPR monitored 1,3-D air concentrations in all 6 communities in 2022: Delhi, Parlier, Santa Maria, Shafter, Oxnard, and Watsonville. Measured 2022 air concentration sites did not exceed human health screening levels for acute, or chronic exposures. Concerning long term data trends noted for 1,3-D in Parlier and Shafter. Parlier long term (6-years) average concentration was above the lifetime (70 year) exposures; the annual average concentration decreased 50% compared to last year.

Sustainable Pest Management- SPM Roadmap emphasizes the need for safer sustainable alternative pest management tools and practices. SPM Roadmap calls for enhanced monitoring and data collection. DPR is in the process of commissioning a fumigant alternatives study to help inform and accelerate sustainable pest management in California.

Discussion of 1,3-Dichloropropene concerns raised by monitoring data. The 6-year average concentration of 1,3-D in Parlier of 1.1ppb exceeds the 70-year average regulatory target of 0.56 ppb. DPR's proposed regulation to mitigate acute and cancer risks associated with 1,3-D scheduled to be implemented on January 1, 2024. Its effectiveness will be assessed through continued monitoring of air concentrations. Occupational bystander regulations are in development with the Office of Environmental Health Hazard Assessment. Independent study will evaluate fumigant alternatives. Methyl bromide- the detection frequencies of methyl bromide (all less than 1% of acute regulatory target value of 1ppb) were higher than in previous years.

DPR will release a final air monitoring report – Study #309 Annual Report 2022. DPR will release the draft Air Monitoring Network Results for 2022 – Volume 12 report for technical comment. Any comments related to 1,3-D regulation should be directed to [DPR 2022 Air Monitoring Network Results](mailto:dpr22005@cdpr.ca.gov) <dpr22005@cdpr.ca.gov> Upon its release, DPR will accept comments on the 2022 AMN draft report for 15 days. Comments should be sent in writing to:

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Committee Comment

Lynn Baker – Enhanced monitoring with SPM Roadmap- increase the amount of site or frequency of collecting? Maziar responded always looking for opportunities, but no solid plan at this time. Minh added that still in beginning phases of how the SPM will affect. Looking at alternatives across technology, methodology, laboratory analysis. Looking at faster real time analysis and more concise monitoring at more sites. More efficient, better technology.

Kari Arnold- 1,3-D limited per county for how much material can be used? Can increase in Parlier be from particulate movement in the air, delta breeze or other air movements? Maziar responded lots of possibilities. Can be the distance from agricultural fields, weather conditions, seasons. Lots of factors come together.

Garrett Keating – What sampling is being done for the Agricultural Bystanders? Maziar responded that it is being handled by the Worker Safety branch. Minh added that they are working with the OEHHA, looking at data, and computer modeling.

Public Comment

No comments to report.

5. Annual Volatile Organic Compounds (VOC) Emission Inventory Report Update – Justin Kroes, DPR

The Department of Pesticide Regulation recently released the draft 2021 report on Volatile Organic Compounds (VOC) emissions. This presentation begins with an overview of the history of DPR's VOC emissions report and VOC regulations, then finish with the report's key findings.

In 1963, the US Clean Air Act (or CAA) passed into law. Through subsequent amendments, the CAA charged the US Environmental Protection Agency with approving state plans to regulate emissions of air pollutants, including ground-level ozone, also known as smog. In contrast to ozone in the upper atmosphere, ground-level ozone is harmful to human and environmental health. Human health effects include increased rates of respiratory infection in healthy individuals, aggravation of existing respiratory illness, and premature death. Ground-level ozone forms in the lower atmosphere through a series of chemical reactions, but two key chemical precursors are nitrogen oxides and VOCs. VOCs are emitted from many sources, one of which is pesticides.

Pesticide emissions of VOCs are regulated by two CA agencies. The Air Resources Board regulates consumer pesticide products. DPR regulates agricultural and structural pesticide applications. In 1994 DPR committed to reducing emissions by a set percentage of emissions in a baseline year (1990) in five nonattainment areas (NAAs), which are defined as areas that have not met CAA standards for ozone. As part of this commitment, DPR conducts an annual inventory of VOC emissions, and publishes the results in an annual inventory report.

DPR's VOC inventory focuses on the peak ozone period between May 1 and October 31. Within that period, VOC emissions are calculated for each pesticide application by multiplying applied product mass and the fraction of a product assumed to contribute to atmospheric VOCs. For fumigant applications, emissions are further adjusted by a factor that accounts for the effect of application method on emissions. Calculated emissions are totaled within each NAA and compared to an emissions reduction target. The reduction target for four of the NAAs is 20% of their 1990 emissions. The San Joaquin Valley NAA has a reduction target of 12% of its 1990 emissions. Each reduction target is equivalent to a regulatory limit, which will be shown on subsequent slides summarizing each NAA's progress. 2021 emissions for each NAA remain below their limits, meaning that the NAAs are achieving mandated reductions.

To prevent emissions from rising above regulatory limits in future years, if the inventory report determines that an NAA's emissions exceed 95% of its regulatory limit, restrictions on pesticide applications and products are triggered. In the San Joaquin Valley NAA, these restrictions are a general moratorium on the use of high-VOC non-fumigant products on any of seven crop types. In the other four NAAs, restrictions are limits on the total fumigant emissions allowed in

subsequent years. Fumigant limits are established through individual fumigant allowances and the ability of counties to deny Notice of Intent (NOIs) and permits for fumigations within an NAA's boundary. No fumigant restrictions are currently active; however, non-fumigant restrictions have been active in the San Joaquin Valley NAA since 2015.

Some of the relevant VOC regulations are included in Title 3 of the CA Code of Regulations (CCR). The regulations define VOCs, list required emissions reductions, detail restrictions, and mandate the publication of an inventory report. Note that emissions are liable to change each year due to changes in weather patterns, agricultural economics, and many other factors.

The five ozone NAAs in California, with the exception of Ventura, cover multiple CA counties. The three southernmost NAAs (Ventura, South Coast, and Southeast Desert) are bounded to the north by San Joaquin Valley and then by Sacramento Metro.

In Sacramento Metro NAA, 2021 emissions were 1.152 tons per day (tpd), below the regulatory limit of 2.2 tpd. No fumigant limits or restrictions are currently active.

In San Joaquin Valley NAA, 2021 emissions were 13.066 tpd, below the regulatory limit of 18.1 tpd. As mentioned earlier, restrictions on the use of certain high-VOC non-fumigant products in this NAA were triggered in 2015. Per 3 CCR 6884(c), "if prohibitions for high-VOC non-fumigant products are in effect... those prohibitions must remain in effect until the hypothetical VOC emissions ...comply with the limit [trigger] for at least two consecutive years." The 2020 and 2021 inventory reports determined that hypothetical emissions are lower than the trigger level for two consecutive years; however, the prohibitions in place since 2013 have been left in place through at least 2023. The decrease in hypothetical emissions resulted from a decrease in pesticide applications. This decrease in applications occurred during years with drought conditions. If the drought conditions that were present during these years alleviate, pesticide use and hypothetical emissions could increase and exceed the trigger level. Accordingly, DPR is maintaining active prohibitions of certain high-VOC fumigants in 2023 in the San Joaquin Valley NAA. The non-fumigant prohibitions that went into effect in 2015 remain active in 2023 in the San Joaquin Valley NAA.

In Southeast Desert NAA, 2021 emissions were over 0.395 tpd, below the regulatory limit of 0.92 tpd. No fumigant limits or restrictions are currently active.

In Ventura NAA, 2021 emissions were 1.51 tpd, below the regulatory limit of 3 tpd. No fumigant limits or restrictions are currently active.

In South Coast NAA, 2020 emissions were 0.992 tpd, below the regulatory limit of 8.7 tpd. No fumigant limits or restrictions are currently active.

The draft 2021 VOC emissions inventory report was posted for public comment on July 19th and can be accessed at [draft 2021 VOC report](#)

<cdpr.ca.gov/docs/emon/vocs/vocproj/voc_data_analysis>. The deadline for submission of public comments is September 5th 2023. Comments should be sent in writing to:

Maziar Kandelous
California Department of Pesticide Regulation
Department of Pesticide Regulation
P.O. Box 95812-4025
Sacramento, CA 95812
or by email at maziar.kandelous@cdpr.ca.gov <maziar.kandelous@cdpr.ca.gov>

Committee Comment

Lynn Baker asked if restrictions have been left in place and that could be the reason for reduced emissions and because of drought. Since there has been more rainfall, how soon would you know if there is an increase in emissions? Maziar responded that the current year data is being examined currently.

Public Comment

No comments to report.

6. Agenda Items for Next Meeting

List any agenda items for next meeting requested by committee. Should be written out similar to committee comments with full name and a brief summary of the request.

The next meeting is scheduled for September 15, 2023 at 10:00 a.m. This meeting will be held virtually on the Zoom platform and broadcast live on the [CalEPA webcast page](https://video.calepa.ca.gov/).
<video.calepa.ca.gov/>

7. Adjourn