PESTICIDE REGISTRATION
AND EVALUATION COMMITTEE (PREC)
Meeting Minutes – July 15, 2022

Committee Members/Alternates in Attendance:

Bill Lee - U.S. Environmental Protection Agency (EPA), Region 9
Dawit Tadesse – State Water Resources Control Board (SWRCB)
Garrett Keating – Department of Industrial Relations (DIR)
Heather Williams – Department of Resources Recycling and Recovery (CalRecycle)
Jaime Rudd – Department of Fish and Wildlife (DFW)
Katherine Sutherland-Ashley – Office of Environmental Health Hazard Assessment (OEHHA)
Kevi Mace – California Department of Food and Agriculture (CDFA)
Lynn Baker – Air Resources Board (ARB)
Matt Hengel – University of California (UC), Davis, IR-4 Program
Ruben Arroyo – CA Agricultural Commissioners and Sealers Association (CACASA)
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

Aniela Burant
Anne Katten – California Rural Legal Assistance Foundation
Armand Ruby
Atefeh Nik
Ben Sacher
Brian Gress – California Department of Food and Agriculture (CDFA)
Clare Mendelsohn
Eric Kwok
Gayatri Sankaran
James Gonzalez
Jane Sellen
Jazmin Gonzalez
Jennifer Henke
Jing Tao - Office of Environmental Health Hazard Assessment (OEHHA)
John Bottorff - CleanEarth4Kids.org
Jose Chang
Lori Miyasato
Marcia Trostle - Nutrien
Marla Kiziah
Mike Zeiss
Nan-Hung Hsieh
Robin Charlton

Sara Huber - State Water Board
Sarah Aird
Stephanie Hughes
Teresa Cox
Vicki Quinn Ghaffarzadeh

DPR Staff in Attendance:

Aisha Iqbal – Pesticide Registration Branch
Andrew Turcotte – Pesticide Registration Branch
Andy Rubin - Human Health Assessment Branch
Aron Lindgren – Pesticide Registration Branch
Brenna McNabb – Pesticide Registration Branch
Brittanie Clendenin – Pesticide Registration Branch
Kara James – Pesticide Registration Branch
Maziar Kandelous - Environmental Monitoring Branch
Minh Pham - Environmental Monitoring Branch
Savannah Hadley – Pesticide Registration Branch
Shelley DuTeaux - Human Health Assessment Branch
Yvan Delgado - Environmental Monitoring Branch

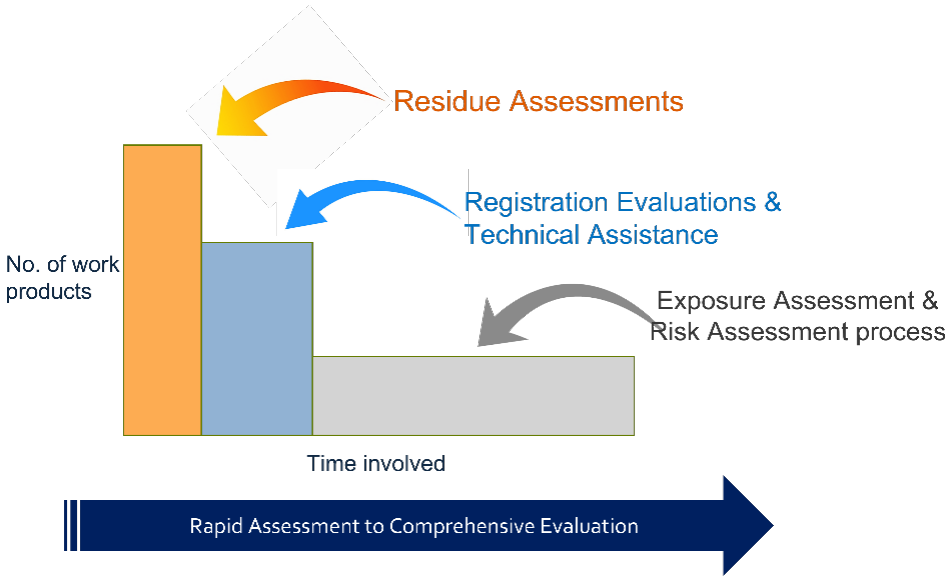
1. Introductions and Committee Business – Tulio Macedo, Chair, DPR

a. Approximately forty (40) people attended the meeting.
b. The Department of Pesticide Regulation (DPR) is working to finalize a number of rulemaking packages including proposals for carbon monoxide devices, neonicotinoid mitigation, and revisions to the medical supervision program. There is currently one proposed regulation open for public comment pertaining to the certification of commercial and private pesticide applicators, the development and submittal of continuing education courses required for pesticide applicator license or certificate renewal, and supervision of non-certified applicators. The public comment period is open until Tuesday, July 19. Additional information is available on DPR's "Proposed and Recently Adopted Regulations" page.
c. On June 16, DPR's Director issued a final determination for the Pesticide Contamination Prevention Act (PCPA) review process for imidacloprid. The determination concurred with the subcommittee's unanimous finding that imidacloprid currently does not pollute and does not threaten to pollute the state's groundwater. Imidacloprid will remain subject to groundwater monitoring requirements and DPR's continuous evaluation program.
d. Since the last PREC meeting, the Pesticide Registration Branch has issued a number of California Notice to Stakeholders, updating registration procedures such as how company name changes are processed and the reprioritization and return policy for new products or amendments submitted to the Registration Branch. Additional information on California Notice to Stakeholders is available on DPR's "Pesticide Registration Branch" page.

1. **Part 1: Human Health Risks from Pesticides: From Rapid Assessment to Comprehensive Evaluation and Part 2: New Approaches to Prioritizing Pesticides for Risk Assessment – Shelley DuTeaux, DPR and Andrew L. Rubin, Primary State Toxicologist**

Dr. Shelley DuTeaux begins by stating the Human Health Assessment Branch's (HHA) support of DPR's mission, to protect public health and the environment, can be grouped into three main areas. First, HHA evaluates toxicology data for all active ingredients registered for use in California. HHA also evaluates formulated products for things like changes to personal protective equipment, restricted entry intervals, and application methods to ensure worker health is being protected. Second, HHA evaluates health risk from pesticides. This can be in the form of rapid dietary assessment when looking at residues on fresh fruits and vegetables to determine if there is a health risk. It could also include looking at very low concentrations of pesticides in drinking water also to evaluate risks, such as the Pesticide Contamination Prevention Act (PCPA) work that was just completed for imidacloprid. This evaluation work also includes our comprehensive human health risk assessment process. Third, HHA provides scientific support for other department goals, such as mitigation. Importantly, every pesticide registered and used in California has been evaluated in some way by HHA for health impacts.

When considering HHA's work products, most of them are rapidly completed because of enforcement needs or registration timelines. If you compare the number of work products versus the time it takes to complete them, HHA's residue assessments only take a short amount of time to complete, such as hours to weeks. Reviewing health impacts of pesticide label changes or reviewing pesticide airborne concentrations take longer, such as from weeks to months. Exposure and risk assessment processes take much longer to complete because of the complex and comprehensive nature of the work. Overall, HHA's analysis of health impact of pesticides range from rapid assessments to long term evaluations as shown in the figure.



For residue assessments and registration evaluations, the pesticide is effectively assigned to the branch to work on. However, for the other projects such as exposure assessment and risk assessment, there is some discretion in which pesticides HHA chooses to work on. As mentioned, each pesticide registered in California is evaluated in some way by HHA. But for risk assessments, there is a selection process that occurs. Dr. Andrew Rubin will discuss HHA's past and current practices for prioritizing pesticides, as well as the progress to revamp this process to be science driven, reproducible, and transparent.

Dr. Andrew Rubin elaborates on HHA's recent efforts to develop a transparent, reproducible, and rapid system for prioritizing pesticidal active ingredients (AI), including new AIs and legacy AIs for comprehensive risk assessment. To accomplish that, Dr. Rubin clarifies why DPR needs to have a workable prioritization procedure. As of 2021, 1066 pesticidal active ingredients have been registered for use in California. With each passing year, approximately 25 new AIs are considered for registration. All 1066 AIs have been evaluated in some way for human health impacts. Of these chemicals, approximately 100 have undergone comprehensive human health risk assessments. DPR prioritizes those chemicals of greatest concern to be considered for comprehensive assessment. As stated in DPR's 2015 memorandum, *Process for Human Health Risk Assessment Prioritization and Initiation*, "DPR strives to protect human health and make the best use of resources by prioritizing risk assessments to address the greatest potential risks".

While far from the only product of DPR's Human Health Assessment Branch, comprehensive risk assessments represent an important and effective means of gauging the health risks associated with the active ingredients requiring the most stringent attention. The goal of the prioritization process is therefore to select the chemicals of greatest concern with respect to human health risks. Environmental concerns at this point are peripheral to HHA's mission and are evaluated in other DPR branches.

In 2015, the National Academy of Sciences (NAS) published a report on DPR's risk assessment procedures <nap.nationalacademies.org/read/21664/chapter/1>. As part of that report, they made several recommendations relevant to the prioritization process that was current at that time. The most significant of these are: (1) Provide explicit documentation for how AIs are categorized into high, medium, and low priority groups, and (2) develop a more objective and structured approach for ranking high priority AIs, develop a scoring system to weight different factors, and peer-review before implementation.

DPR's current process went into effect in 2015. It represents an ongoing interaction between toxicologists and exposure scientists with the Human Health Assessment (HHA) branch, the Office of Environmental Health Hazard Assessment (OEHHA), and the U.S. Environmental Protection Agency (U.S. EPA). The process begins with the Adverse Effect Advisory Panel (AEAP), which handles the new active ingredients coming into DPR. The AEAP group pesticides based on toxicity and exposure potential into high, medium, and low priority groups. From there, the active ingredients are passed on to the Risk Assessment Prioritization Product Work Group (RAPWG) for ranking. The RAPWG generates a ranked list of the top ten candidates for risk assessment. Then through an interactive process involving the Pesticide

Registration and Evaluation Committee (PREC), the Scientific Review Panel (SRP), and DPR management, candidate chemicals are recommended for risk assessment (RCD) initiation.

This process is similar to the process used by OEHHA and its Proposition 65 evaluation program in its reliance on the expertise of scientists from recognized regulatory authorities. However, reflecting the concerns of the NAS panel, DPR's current process is difficult to recreate in any detailed manner since the discussions are not quantitative in terms of ranking and the benchmarks are not always transparent.

DPR is focused on three main characteristics necessary for an effective prioritization paradigm: transparency, reproducibility, and rapidity. First, transparency ensures that stakeholders know and understand all components of, or inputs into, the system. Second, reproducibility ensures that all inputs are readily identifiable, with rank-scoring based on a clear, rules-based methodology that is easily reproduced. And last, rapidity ensures that all inputs represent standard toxicological, environmental, and exposure endpoints readily available in DPR databases and other recognized sources.

Three alternative approaches to prioritization have been reviewed starting with a hazard-based approach which considers only graded toxicity endpoints similar to OEHHA's Proposition 65 and U.S. EPA Integrated Risk Information System (IRIS) programs. The risk-based approach is a combination of toxicity and exposure considerations which is in fact an integrated approach that U.S. EPA Toxic Substances Control Act (TSCA) and New York State's Rochester Institute of Technology used in their program for prioritizing industrial chemicals. The third approach is a decision tree approach which considers hazard and exposure separately, though leaving open the possibility of combining them into a ranking system.

The hazard-based approach represents our initial attempt to grade the toxicity level of particular chemicals. HHA selected five separate toxicity domains that are easily identifiable through HHA's Summary of Toxicology Documents. The five domains are: acute toxicity, chronic toxicity, developmental toxicity, reproductive toxicity, and oncogenicity. This is not to say that there aren't other toxicity domains that could be considered. Primary irritation and immunotoxicity would be two examples. However, as mentioned, these five domains are readily available from the Toxicity Summary Documents and are widely recognized as applicable, general toxicology endpoints. Should it be decided that other endpoints are called for, they can be added.

Included in the hazard-based approach are graded laboratory animal responses. For acute toxicity, there are four levels, with the highest score given to the highest toxicity category designation and the lowest score given to the lowest toxicity category designation. This ensures that the highest score relates to the highest toxicity level. For chronic toxicity, there are also four levels based on the lowest known points of departure determined in animal studies, as reported in the Summary of Toxicology Documents. For developmental toxicity, there are only two categories, for the time being. This is based on the approach of HHA and other regulatory authorities to determining whether or not a compound is to be designated as a developmental

toxicant or not. Reproductive toxicity is categorized similarly using reproductive endpoints (as opposed to developmental endpoints). Finally, for oncogenicity, judgement is based solely on whether the compound in question causes tumors in animals. In the future, toxicity levels could be added to these categories. In the case of oncogenicity, for example, there could be levels that recognize two- *versus* one-species oncogenes, or whether or not the oncogenic chemical is genotoxic, or at what dose tumors are first noted. Similarly, for developmental toxicity, a category for neurodevelopmental effects could be added, which if present, could increase the score related to developmental toxicity.

This approach is based solely on the toxicology data coming from HHA Summaries of Toxicology Documents which summarized Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)-mandated toxicology studies. The toxicity inputs are binned to provide the basis for ranking. The system is advantageous due to its versatility, applicability, and speed.

Chemicals can be ranked using the hazard-only approach but in doing so, a hugely important risk determinant, exposure, is neglected. This led HHA to experiment with a risk-based approach. This approach integrates hazard and exposure, generating rank scoring through solving the Central Equation of Regulatory Toxicology, i.e., risk equals hazard times exposure. Risk increases in proportion to increases in hazard and increases in exposure. The risk-based approach requires, to the extent possible, that the hazard and exposure terms be aligned with respect to duration and route of exposure. However, this has proven to be difficult for two reasons. Reason one, for new AIs, it is only possible to estimate short-term exposures. Longer-term exposures require data in DPR's Pesticide Use Report (PUR). For new AIs, those data are not likely to exist in the PUR. Reason two, for all AIs, discrete exposure estimation is an exhaustive and time-consuming process due to the fact that exposure is dependent on, and specific to, the uses and amounts indicated by the labels associated with each chemical. For any particular chemical, there can be many labels, each amounting to 40 to 50 pages of text with application directions based on crop type, weather conditions, application methodologies, and requirements for the use of personal protective equipment. For this reason, extensive label analysis, which is a necessary part of the risk assessment and mitigation processes, can take months to accomplish for a single chemical and thus cannot be part of prioritization. To be clear, prioritization is not the same as risk assessment. It is meant to inform us of the chemicals most in need of risk assessment.

Another approach to prioritization is represented by the decision tree approach. This approach lays out the most important inputs in the form of a flow chart through both the hazard and exposure terms, asking first if there is sufficient weight to determine that YES, there is a hazard and YES, there is exposure for chemicals undergoing prioritization. Thus, there are five inputs into hazard, as mentioned earlier, and currently five inputs into exposure being considered. The exposure inputs include application method and rate, water access, air access, persistence in the environment, and the potential for child exposure, pre or post birth. If the answer is NO for hazard or for exposure, the chemical is immediately assigned a low priority status. If the answer is YES for exposure and for hazard, it leads to a rank scoring process.

While HHA has now generated a reasonably robust rules-based system for determining the presence of hazard, it has only begun to create such a system for exposure. While five exposure inputs were shown on the decision tree, HHA has only established a potential way to determine whether there is water or air access so far. HHA is now looking at practical ways to assess exposure probability through application method, application rate, likelihood of child exposure, and environmental persistence.

Database construction: lower and higher priority chemicals

	SNV (Y/N)	Vapor Pressure mmHg	LD50_oral	chronic	dvpmt	repro	onco
Florpyrauxifen-benzyl	0	0.00000024	5000	300	0	0	0
Florylpicoxamid (Adavelt)	0	0	2000	14	0	0	0
Fluazaindolizine	1	1.5E-09	940	35.8	1[a]	0	0
Inpyrfluxam	1	0	57[b]	6	0	0	0
Ipflufenoquin	1	0	2000	24.75	0	0	0
Mefentrifulconazole	0	24	5000	1[d]	0	0	1
Picarbutrazox	0	9E-10	300[f]	2.84	1	0	1
Pydiflumetofen	1	1.3801	5000	9.2	0	0	1
Tiafenacil	1	N/A	2000	0.35	0	0	0
Valifenalate	1	N/A	5000	<1	1	0	1
Pyraziflumid	1	2.63E-8	2000	2.15	0	0	1
Tetraacetylethylenediamine (TAED)	1	1.48E-8	7940	No study	0	No study	0
Pyraclonil	1	N/A	800	4.4	0	0	1
Chlorothalonil	1	0.000002	5000	2	1	1	1
Propanil	1	0.00000091	779	1.5	0	0	1
Broflanilide	0	0.068	5000	1.7	0	0	1
Acephate	1	0.000000266	360	0.09	0	0	1
Carbaryl	1	0.00000117	233	0.5	0	1	1
Dichlorvos (DDVP)	0	0.0165	56	0.05	0	0	1
Dicrotophos	1	0.00016	11	0.025	1	0	1
Methyl parathion	1	0.000018	6	0.03	0	1	0

In order to test different rank scoring options, data are required on a range of chemicals previously prioritized by DPR. For each active ingredient, the chemical assessed for specific numerical values (SNV) and vapor pressure, two endpoints related to exposure, as well as the five toxicity endpoints points discussed earlier. In the table above, if a chemical has previously been designated as high priority, it appears above the black line.

While HHA recognizes that these inputs are starting points, there may well be other factors, including physical, chemical, or other characteristics, that will influence exposure.

Examining the exposure endpoints that have been used so far, SNVs are indicators of a compound's potential to leach to groundwater and thus appear in drinking water. SNVs consider six physical chemical parameters: water solubility, soil adsorption coefficient, hydrolysis half-

life, and a few others. While there are other factors that may influence the likelihood of a chemical appearing in drinking water, SNVs are the only consideration at this time.

Vapor pressure is an indicator of a compound's potential to appear in air. For the present analysis the cutoff is 10^{-2} millimeters mercury. In other words, those compounds exhibiting vapor pressures above this cut off will have a very strong tendency to appear in air as a gas and are thus potentially inhalable. Clearly, there are other avenues to air, including high pressure spray applications where pesticides can enter air as aerosols or in association with dust particles or water droplets.

The first attempt to generate ranked scoring involved a "Stage one-Stage two", rank scoring approach. In stage one, we (the HHA Prioritization Workgroup) asked only if a candidate pesticide has access to air or water as indicated by its SNV and vapor pressure values. If not, we concluded that exposure was unlikely and immediately consigned that chemical to a low priority status. With the current database of 21 chemicals, this meant three chemicals, florylpicoxamid, florpyrauxifen-benzyl, and picarbutrazox, were immediately low-prioritized and not analyzed further. The remaining 18 chemicals were then ranked in stage two according to the hazard ranking system. Scoring was therefore conducted only on chemicals which exposure was likely through air or water. Interestingly, had such a system been used for this cohort of chemicals, those that received lower priority in the past would also rank lower in the present system.

Please understand that this represents only a preliminary approach. Even so, it shows a promising potential avenue to rank scoring. It is likely that HHA will develop an exposure score to parallel the hazard score, so that the exposure determination is not simply a YES-NO proposition. This would be allowing us to move beyond to the Stage one-Stage two approach.

DPR's prioritization process has a way to go before it becomes a practical and workable system. The next steps in updating DPR's prioritization process include database expansion which will be important for paradigm testing. Toxicity parameters and cutoffs need to be constantly examined and re-examined, and primary eye and dermal irritation, immunotoxicity, developmental neurotoxicity, 2-species oncogenesis, need to be considered. For example, are the points of departure (PODs) appropriately set in the case of chronic toxicity? It is also very important to consider how epidemiology, reports from DPR's pesticide injury surveillance program (PISP), and case studies and adverse effects reports from other sources will feed into the process. Exposure parameters, including application methods, amounts, potential for exposure to children and pregnant women, surface water availability, persistence and other possible parameters should be considered. Hopefully, greater nuance will be brought to the exposure inputs, although without sacrificing transparency and rapidity. HHA must also decide if we will reprioritize chemicals previously designated as high priority using the newer paradigm. Finally, once a solid program has been formed, a guidance document will be developed.

Dr. Shelley DuTeaux discusses the simplified graphic of how HHA currently prioritizes active ingredients for comprehensive human health risk assessment. Dr. Rubin presented a possible best approach that meets the recommendations of the National Academies of Science, especially for

greater reproducibility and transparency. Like the current process, the potential future approach starts with evaluating the toxicology and exposure data for new active ingredients. The next step would be to use a decision tree that would incorporate science-based factors that are then weighted, resulting in rank scores for active ingredients that are then recommended for risk assessment. The final prioritization method will incorporate other departmental needs affecting ultimate implementation but will likely include presenting candidate active ingredients to the PREC and publishing updated lists. We are sharing our progress and thinking at this time in order to solicit feedback for the final decision making.

Committee Comment

Garrett Keating asked how uniform are the data sources used, are they all from the same sources? Also, for the method of application, will the different methods be weighted differently, for example, exposure?

> Dr. Shelley DuTeaux stated that, in terms of uniformity of data, pesticides that are registered in California require the same FIFRA guideline data sources required for registration at the federal level, so they are uniform data requirements as laid out in the federal code of regulations. However, the risk assessment process, considers all data including open literature in establishing the points of departure. For registration, which feeds into the prioritization process, there are uniform sets of data required for registrants to submit. In terms of the method of application, that is certainly something that will be considered. There is a spray drift work group that is just starting with DPR and it is important to consider that there could be off-site migration of pesticides simply due to of the method of application and not due to the chemical characteristics of the pesticides. That will be looked into further with the exposure assessment team and the environmental monitoring branch.
>
> Dr. Andrew Rubin added that from the beginning, the application method has been a topic of concern for some of the reasons mentioned earlier in the discussion. If a chemical is going to be applied by high pressure spray, it is going to get into the air and that needs to be considered as well as if the chemical is going to be added to irrigation water. Another aspect that was not mentioned, is how the chemicals should be divided with respect to intended use. For example, is the chemical an agricultural use chemical or a structural use chemical? These kinds of distinctions will likely affect the amounts applied and thus affect potential exposure. It's possible that a prioritization process would be restricted to agricultural use chemicals or separated based on agricultural use or structural use and so forth.

Matt Hengel referred to the mention of over 1000 different AIs and asked if those are all conventional pesticides or are they conventional and biopesticides.

> Dr. Shelley DuTeaux replied that includes the entire gamut of active ingredients including conventional, microbials, and biologicals. Those categories would be

considered in a prioritization process. Another possibility would be to only prioritize conventional pesticides since those pose a higher risk then biologicals. To reiterate, the 25 new pesticides per year that the department analyzes and that the branch receives toxicology data on includes all sorts and kinds of pesticides.

Matt Hengel followed up on the subject of application, asking if the department foresees some kind of weighting system as more growers are going to a chemigation type application instead of using broadcast sprays or aerial applications?

Dr. Shelley DuTeaux stated that this is certainly a valuable thing to consider. Offsite migration is something that would potentially have a higher rank score because neighboring communities and residential or occupational bystanders are more likely to be exposed. With newer methods that reduce the amount of pesticide applied there is less potential for exposure to many subpopulations, but we will still need to consider worker health.

Dr. Andrew Rubin mentioned that this is a prioritization process and not a risk assessment process. An effort will be made to consider as much as possible without making the process so onerous that it can't be completed in a timely manner. In view of the fact that large numbers of chemicals need to be prioritized, we must ensure that we have a rapid and reproducible system.

Tom Inchin asked for clarity on the difference with the risk assessment and the process of understanding when the benefit outweighs the risk and if that is taken into consideration. In California, the number of potential products that are available are being reduced, as are the tools available for use.

Dr. Shelley DuTeaux responded that there is a continuum of processes in DPR, though sometimes there is a larger focus on the risk assessment process. The entire process starts with receiving data required for registering a pesticide in California. Next is the prioritization process, then risk assessment process, and then the risk management process. A lot of the questions that have to do with risk versus benefit, industry need, stakeholder concern, and department goals, come in on the risk management side. HHA provides the scientific justification and basis for some of those risk management decisions. But there are many other issues that are considered during risk management, especially when considering changes to regulations and evaluating mitigation options. Impacts to, for example, residential communities are evaluated as part of that decision making process.

Dr. Rubin added that the risk assessment process is based solely on human health considerations. It does not consider risk-benefit. In fact, the department has a firewall to keep risk management decisions separate from human health assessment so that the latter can be conducted objectively and without influence of non-scientific issues.

Tom followed up stating this world is experiencing some unusual situations with things that could plague us and at times there might be a need for a product that has been potentially non-registered or removed from the arsenal, if you will, for something such as a plague or something serious. Does DPR ever take that into consideration?

> Dr. Shelley DuTeaux mentioned that public health considerations are very important, representing a critical pesticidal use in the state. In this context, she mentioned the hepatitis C outbreak that occurred in San Diego a couple years ago. Such concerns are appropriate to bring up during the risk management phase.

Katie Sutherland-Ashley asked that currently under the process for the Adverse Effects Advisory Panel (AEAP) there are members of OEHHA and the U.S. EPA involved in the process. Moving forward, will it just be HHA being the sole group responsible for the toxicity, exposure evaluation, and risk ranking under this proposal, or will there still be involvement by OEHHA and U.S. EPA?

> Dr. Shelley DuTeaux stated that that OEHHA and U.S. EPA involvement is important and that the department intends to have a process that is reproducible and transparent (such as based on ranked scores). The goal is to have some sort of public comment and interaction with regulatory and other agency partners after pesticides have been prioritized. That part of the process is still in development.
>
> Dr. Andrew Rubin added that input is needed now from those departments on how the process is being approached. This work has been mostly internal and this is the first time it is being presented outside the department.

Public Comment

John Bottorff with CleanEarth4Kids.org inquired how DPRs human health evaluation process compares to that of the European Union (EU)? The EU bans substantially more pesticides than the United States and California. From comments made, DPR's number one priority does not appears to be protecting human health.

> Dr. Shelley DuTeaux replied that today's presentation centered on development of a prioritization process related to initiation of risk assessment, and not the actual outcome of risk assessment or outcome of mitigation. Cancelling pesticide uses or tolerances generally only happens at the federal level. The risk assessment process is differs slightly between DPR the EU. There is access to similar data, although scientists differ with respect to how toxicity studies are interpreted. It is not always the case that the EU is more protective than California or the United States. For example, DPR and U.S. EPA use the same toxicology categories mentioned by Dr. Rubin for evaluating acute oral hazards. Those categories are more conservative than those used by the EU (in the Global Harmonization System). The EU only has three toxicity categories based on higher thresholds for what is considered acutely toxic. DPR has a guidance document

<cdpr.ca.gov/docs/registration/canot/2022/ca2022-15.pdf> on the website for reference that discusses these differences.

Dr. Andrew Rubin elaborated that the idea behind prioritization is to get the riskiest chemicals forward so that risk assessments can be completed on those chemicals in the most efficient way possible.

John Bottorff follows up asking how will DPR and HHA address chronic exposure to pesticides?

Dr. Shelley DuTeaux mentioned the part of Dr. Rubin's presentation where he showed how chronic toxicity values will be incorporated into prioritization and an example where if HHA only relied on acute toxicity values, some of the most hazardous conventional pesticides might not have entered the risk assessment process. A whole range of toxicity domains need to be considered.

Dr. Andrew Rubin stated the previous process considered the chronic toxicity endpoint only in a general sense, reiterating that the department is working to make prioritization more transparent, rapid, and reproducible.

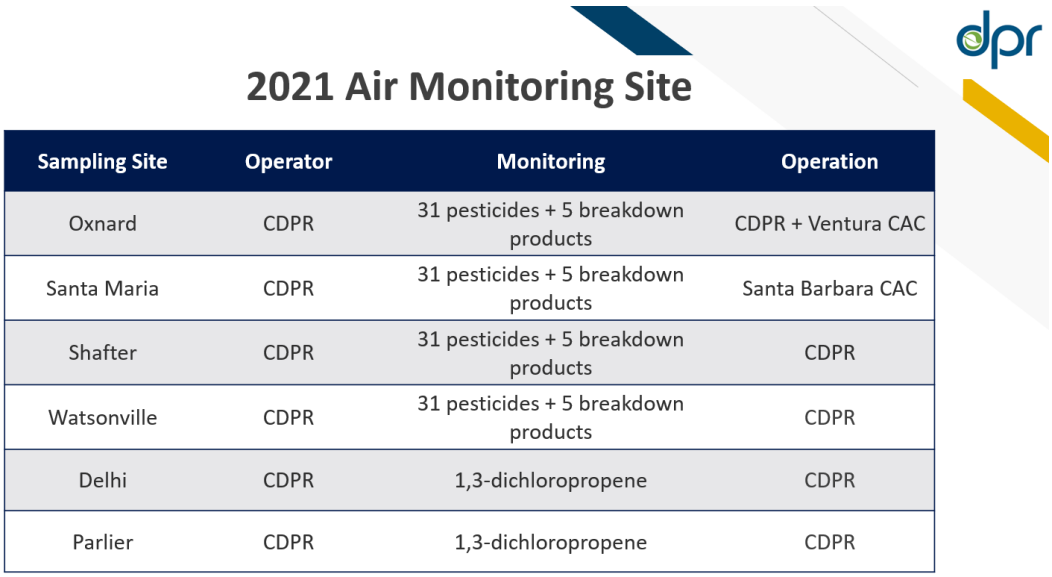
Mike Zeiss commented that DPR needs to complete more risk assessments. Over the past decade, DPR has averaged less than two risk assessments per year, which is simply not sufficient to keep pace with new registrations. Second, the PREC needs to put mitigation on the agenda. Risk assessment, as important as it is, is only part of the process. After risk assessment identifies unacceptable risks, DPR needs to take action. Third, the PREC has a continuing role to play in these processes in the future. PREC's stated mission is "…to foster communication and understanding on pesticide issues". The public needs PREC's help not only in 2022, but every year. The risk assessment and mitigation process is failing to live up to DPR's mandate to protect the public. Less than two risk assessment per year is simply not enough. So how can DPR increase its pace? Ask DPR's scientists, they have the expertise to find solutions. We all agree that DPR should not water down it's science. The risk assessment documents have to withstand the pushback from industry. Does every risk assessment report need to be 200 hundred pages? Mike urges DPR scientists to think carefully about shorter, faster report formats for some pesticides. In addition, there may be opportunities to narrow the scope of the content. Please remember when the National Academy of Sciences reviewed DPR's process, it mentioned that DPR should focus on California specific exposure assessments and delve into toxicology only for those pesticides where U.S. EPA's analysis was not adequate. DPR needs to find a way to complete more risk assessments, less than two per year fails to meet DPR's mandate. PREC needs to put mitigation on the agenda. Mitigation means taking action to address unacceptable health risks. Risk assessment without mitigation is basically useless. Even when risk assessments identify unacceptable health risks, and many DPR risk assessments do, DPR lets the results sit on a shelf for years before taking mitigation action. To the public, this looks like negligence. PREC's help is needed to foster communication and understanding. PREC need to follow up and review progress every year. Let's make communication and understanding permanent.

Caroline Cox emailed in asking when will the new ranking procedure be ready to be used? Seven years since the NAS report is too long. How many pesticides will be screened every year using the new ranking procedure?

> Dr. Andrew Rubin responded live stating that there needs to be a new ranking procedure first, and that is under very active development and consideration. Once there is one that is competent to stand testing, then a guidance document will need to be developed. Indeed, it was 2015 when the NAS released their recommendations. We have been working on the prioritization portion of those recommendations actively over the past year and will continue in the near future.
>
> Dr. Shelley DuTeaux added that once the guidance document is ready, it should go to public comment to receive formal responses from stakeholders. This will ensure that the development process is as transparent as possible.

2. **Ambient Air Monitoring Results for 2021 - Maziar Kandelous, DPR, Yvan Delgado, DPR, and Jazmin Gonzalez, DPR**

Maziar Kandelous begins the presentation stating Ambient Air Monitoring's goal for California Department of Pesticide Regulation (CDPR) is to monitor ambient air to assess exposures and risks, monitor current mitigations to ensure they are working as expected, and to evaluate long-term trends. The Air Monitoring Network (AMN) has four sample sites and monitors 31 pesticides and five breakdown products during January 1 through December 31 of 2021. Study 309 had two sample sites and took place in Merced and Fresno counties monitoring 1,3-D throughout the entire year of 2021. 1,3-D is one of the 36 chemicals monitored in AMN sites. However, for the purpose of statewide comparison, the results of 1,3-D monitoring will be discussed along with the result of Study 309.



2021 Air Monitoring Site

Sampling Site	Operator	Monitoring	Operation
Oxnard	CDPR	31 pesticides + 5 breakdown products	CDPR + Ventura CAC
Santa Maria	CDPR	31 pesticides + 5 breakdown products	Santa Barbara CAC
Shafter	CDPR	31 pesticides + 5 breakdown products	CDPR
Watsonville	CDPR	31 pesticides + 5 breakdown products	CDPR
Delhi	CDPR	1,3-dichloropropene	CDPR
Parlier	CDPR	1,3-dichloropropene	CDPR

In 2021 there are six monitoring stations: Oxnard, Santa Maria, Shafter, Watsonville, Delhi, and Parlier. The Santa Barbara and Ventura County office facilitated air monitoring in Oxnard and Santa Maria. Delhi and Parlier were for Study 309 while the other four were for the AMN.

CDPR estimates the potential for adverse health effects by comparing the air concentrations to health screening levels or regulatory targets. Screening levels (SLs) are based on preliminary assessment of possible 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.

Regulatory targets (RT) are established after a formal risk assessment of chemical's toxicity and potential exposures and supersede SLs. CDPR puts measures in place based on RTs to limit exposures and avoid adverse effects. A measured concentration that is above the RT does not necessarily indicate an adverse health effect has occurred, but it does indicate that restrictions on the pesticide use may need to be modified. 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.

Yvan Delgado takes over to share the Air Monitoring Network (AMN) for 2021. In 2021 ambient air was monitored in four communities across California: Watsonville, Shafter, Santa Maria, and Oxnard. The results showed three different types of detections which include quantifiable, trace, and non-detections (ND). Quantifiable detections refer to pesticide concentrations above the limit of quantitation, trace detections refer to pesticide concentrations below the limit of quantitation but above the method detection limit, and ND refers to pesticide concentrations below the method detection limit. In 2021, 10 pesticides were quantifiable, 12 pesticides were trace, and 14 pesticides were not detected.

Pesticide Detections (and %) by Location as Individual Samples

Community	Number of possible detections	Quantifiable or Trace detections	Quantifiable detections
Oxnard	1,727	93 (5%)	39 (2%)
Santa Maria	1,761	197 (11%)	82 (5%)
Shafter	1,835	110 (6%)	79 (4%)
Watsonville	1,838	74 (4%)	51 (3%)
Total (all sites)	**7,161**	**474 (7%)**	**251 (4%)**

The number of possible detections represents the number of pesticides multiplied by the number of monitoring weeks. For the communities, it ranges from 1,700 to 1,800 approximately. The largest number and percentage of quantifiable and trace detections was in Santa Maria. Less than five percent of all samples have quantifiable concentrations across all communities.

Number of Quantifiable Detections (and %) at Each Location

Pesticide	Oxnard	Santa Maria	Shafter	Watsonville
Chloropicrin	5 (11%)	5 (11%)	T	9 (17%)
Dacthal	1 (2%)	T	ND	T
DDVP	T	T	1 (2%)	T
EPTC	ND	ND	1 (2%)	ND
Malathion	1 (2%)	5 (10%)	ND	ND
Malathion oa	1 (2%)	T	T	ND
Methyl Bromide	17 (35%)	31 (63%)	28 (55%)	15 (29%)
MITC	5 (11%)	13 (27%)	13 (26%)	3 (6%)
Trifluralin	ND	2	1 (2%)	ND

ND = Non-detected
T = Trace

The figure above illustrates the number of quantifiable detections and percentages at each location. The numbers were calculated with the detected pesticides only. The prior figure shows ten pesticides but above shows only nine because 1,3-D will be discussed later on. For example, out of the 82 quantifiable detections in Santa Maria, five of them were Chloropicrin detections. About 50 percent of all detected pesticides were quantifiable while the other 50% were detected at trace levels.

Highest Measured Concentrations (ppb) and Percent of Screening Levels

Pesticide	24-hour (Acute)	SL %	4-week (Subchronic)	SL %	1-year (Chronic)	SL %
Chloropicrin	2.6†	4*	0.42‡	120	0.13	48
Dacthal	0.001	< 1	0.001	< 1	< 0.001	< 1
DDVP	0.003	< 1	0.001	< 1	< 0.001	< 1
EPTC	0.017	< 1	0.004	< 1	< 0.001	< 1
Malathion	0.009	< 1	0.003	< 1	< 0.001	< 1
Malathion oa	0.001	< 1	0.001	< 1	< 0.001	< 1
Methyl Bromide	0.95	< 1*	0.24	5	0.026	3
MITC	0.18†	< 1*	0.06	6	0.012	12
Trifluralin	0.008	< 1	0.003	< 1	< 0.001	< 1

† 8-hour average
* Regulatory target
‡ 13-week average

ND = Non-detected
T = Trace

This figure shows the highest concentration detected in 2021 across all locations for acute, subchronic, and chronic levels. The focus will be on the percent of screening levels because they are more informative and parts per billion (ppb) concentrations. The acute levels in all pesticide concentrations were four percent or less than the screening levels for regulatory targets set by DPR. The subchronic column shows that Chloropicrin exceeds its screening level by 20 percent while the other pesticides were six percent or less. For chronic, it shows all pesticides being 50 percent of less for all screening levels.

Highest Acute (24-hour) Concentrations (ppb) and SL% by Location

Pesticide	Oxnard	Santa Maria	Shafter	Watsonville
Chloropicrin†*	2.6 (4%)	0.62 (1%)	T	0.31 (1%)
Dacthal	0.01 (1%)	T	ND	T
DDVP	T	T	0.01 (1%)	T
EPTC	ND	ND	0.02 (1%)	ND
Malathion	0.01 (1%)	0.01 (1%)	ND	ND
Malathion oa	0.01 (1%)	T	T	ND
Methyl Bromide*	0.03 (1%)	0.08 (1%)	0.05 (1%)	0.95 (1%)
MITC†*	0.18 (1%)	0.13 (1%)	0.13 (1%)	0.06 (1%)
Trifluralin	ND	0.01 (1%)	0.01 (1%)	ND

† 8-hour average
* Regulatory Target

ND = Non-detected
T = Trace

The figure above shows the acute concentrations for all pesticides were four percent or less than the screening levels or regulatory targets set by DPR.

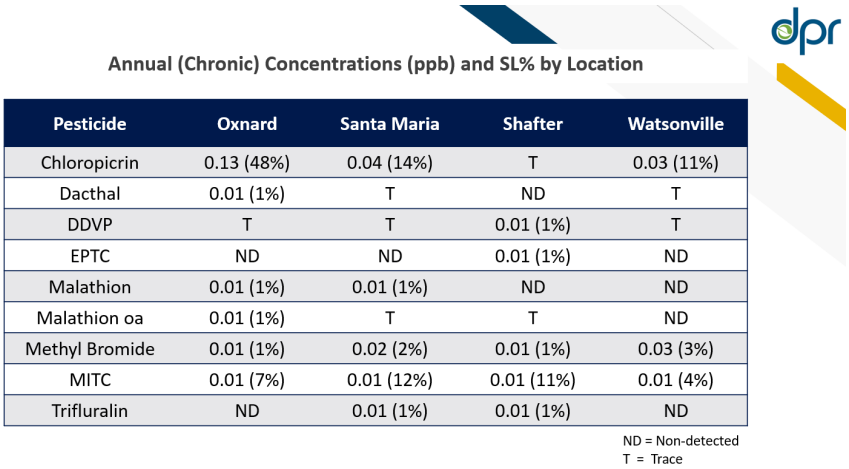
Highest Sub-chronic (4-week average) Concentrations (ppb) and SL% by Location

Pesticide	Oxnard	Santa Maria	Shafter	Watsonville
Chloropicrin†	0.42 (120%)	0.09 (27%)	T	0.10 (28%)
Dacthal	0.01 (1%)	T	ND	T
DDVP	T	T	0.01 (1%)	T
EPTC	ND	ND	0.01 (1%)	ND
Malathion	0.01 (1%)	0.01 (1%)	ND	ND
Malathion oa	0.01 (1%)	T	T	ND
Methyl Bromide*	0.03 (1%)	0.05 (1%)	0.03 (1%)	0.24 (5%)
MITC	0.05 (5%)	0.06 (6%)	0.03 (3%)	0.02 (2%)
Trifluralin	ND	0.01 (1%)	0.01 (1%)	ND

† 13-week averages
* Regulatory Target

ND = Non-detected
T = Trace

The figure above shows the subchronic concentrations by location. It shows the rolling four-week average concentrations for the pesticides. In the case of Chloropicrin, it is based on a 13-week average. For the subchronic concentration, the pesticides were all below six percent of their screening levels except Chloropicrin which was 120 percent screening level in Oxnard.



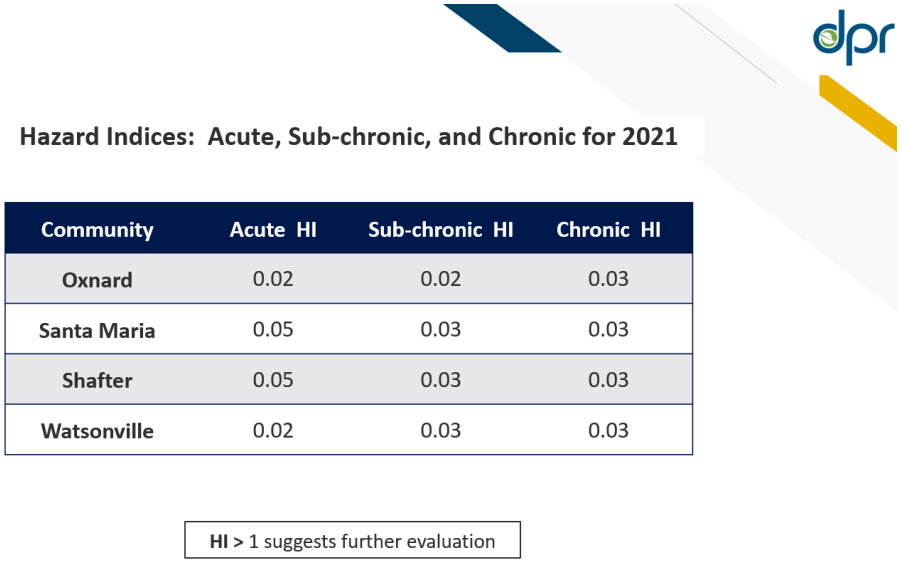
Annual (Chronic) Concentrations (ppb) and SL% by Location

Pesticide	Oxnard	Santa Maria	Shafter	Watsonville
Chloropicrin	0.13 (48%)	0.04 (14%)	T	0.03 (11%)
Dacthal	0.01 (1%)	T	ND	T
DDVP	T	T	0.01 (1%)	T
EPTC	ND	ND	0.01 (1%)	ND
Malathion	0.01 (1%)	0.01 (1%)	ND	ND
Malathion oa	0.01 (1%)	T	T	ND
Methyl Bromide	0.01 (1%)	0.02 (2%)	0.01 (1%)	0.03 (3%)
MITC	0.01 (7%)	0.01 (12%)	0.01 (11%)	0.01 (4%)
Trifluralin	ND	0.01 (1%)	0.01 (1%)	ND

ND = Non-detected
T = Trace

This figure shows the annual concentration by location, also known as the chronic concentrations. None of the annual pesticide concentrations exceeded its chronic screening level.

Moving forward with the 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 including in the AMN report. Those 15 are Acephate, Bensulide, Chlorpyrifos and its oxygen analog (OA), Dichlorvos (DDVP), DEF, Diazinon and OA, Dimethoate and OA, Methidathion, Malathion and OA, Oxydemeton, Methyl, and Phosmet. Cumulative exposure was estimated using a hazard quotient (HQ) for each pesticide which is air concentration detected divided by screening level. This is calculated for each pesticide. All HQs were added to determine a hazard index (HI) value at each monitoring site by adding the HQs for each pesticide. A HI value greater than one suggests further evaluation.



Hazard Indices: Acute, Sub-chronic, and Chronic for 2021

Community	Acute HI	Sub-chronic HI	Chronic HI
Oxnard	0.02	0.02	0.03
Santa Maria	0.05	0.03	0.03
Shafter	0.05	0.03	0.03
Watsonville	0.02	0.03	0.03

HI > 1 suggests further evaluation

For organophosphate across the four communities for each acute, subchronic, and chronic hazard indexes were below .05 and do not need further evaluation.

Cancer risk is the probability of an additional case of cancer over a 70-year period and is calculated by the normalized breathing rate of a human adult (nBR) times the mean lifetime (70-year) air concentration (LAC) multiplied by the cancer potency factor in humans (CPF_H). The AMN program monitors seven pesticides that are designated as known or probable carcinogens: 1,3-D, Chlorothalonil, Dichlorvos (DDVP), Diuron, Iprodione, and Propargite. Of those seven pesticides in 2021, 1,3-D and DDVP were detected. The default breathing rate (nBR) of an adult is 0.28 (m^3/kg/day). In the absence of 70-year monitoring data, LAC is the pesticide's historic average concentration. Determined by DPR, the CPF_H for 1,3-D is 0.014 (m^3/kg/day)$^{-1}$ and for DDVP is 0.35 (m^3/kg/day)$^{-1}$.

Cancer Risk Estimates: DDVP

Community	Historic Average Conc.	Cancer Risk Estimate	Cancer Risk Target	Cancer Risk % Target
Oxnard	0.0002 ppb (1.45 ng/m^3)	1.42E-07	1.00E-05	**1.4 %**
Santa Maria	0.0004 ppb (3.94 ng/m^3)	3.86E-07	1.00E-05	**3.9 %**
Shafter	0.0001 ppb (1.10 ng/m^3)	1.08E-07	1.00E-05	**1.1 %**
Watsonville	0.0002 ppb (1.81 ng/m^3)	1.77E-07	1.00E-05	**1.8 %**

This figure shows the cancer risk for DDVP and that the DDVP cancer risk is four percent or less across the four communities, Oxnard, Santa Maria, Shafter, and Watsonville.

To summarize, 10 pesticides were detected at quantifiable levels, 12 were detected at trace levels, and 14 pesticides were not detected. 1,3-dichloropropene, methyl bromide, and MITC were detected in all four communities. Hazard indices for organophosphates were less than 0.1 in all sampling locations. Cancer risk percent targets for DDVP were four percent less in all sampling locations. Acute and chronic SL and RT were not exceeded for any pesticide. The 13-week average of Chloropicrin in Oxnard was 0.42 ppb, exceeding its subchronic SL of 0.35 ppb by 20 percent. This was due to two high detections of 2.6 ppb on July 23 and 1.7 ppb on July 28.

Jazmin Gonzalez stepped in to share the 1,3-D ambient air monitoring results for 2021.

Monitoring locations were allocated across two studies, the first was the AMN which monitored Watsonville, Santa Maria, Oxnard, and Shafter, and the second was the 1,3-D study which monitored Delhi and Parlier. This was a targeted 1,3-D study and the goal was to monitor in the high use areas of the central valley. The second goal was to evaluate the effectiveness of 1,3-D

mitigation measures that went into place in 2017. Monitoring began on December 1, 2016 at both sampling locations. Similar to the AMN, one 24-hour air sample was collected at each site once a week on a randomly selected day. The reporting limit for 1,3-D monitored as part of this study was equal to 0.01 ppb and analysis was conducted at the California Department of Food and Agriculture Laboratory (CDFAL).

2021 1,3-D Ambient Air Monitoring Results

1,3-D measured at quantifiable concentrations by sampling location:

Site	Study #	# of Collected Samples	Percent of Quantifiable Detections %
Delhi	309 (1,3-D)	51	71
Oxnard	257 (AMN)	49	9
Parlier	309 (1,3-D)	52	75
Santa Maria	257 (AMN)	49	53.1
Shafter	257 (AMN)	51	68.6
Watsonville	257 (AMN)	51	47.1

This figure shows a summary of detection rates at each monitoring location in 2021. The third column shows the number of samples during the year and the last column shows the percent of quantifiable detections. A range is illustrated on the table between the nine percent that was detected in Oxnard and the 75 percent detected in Parlier.

2021 1,3-D Ambient Air Monitoring Results

Maximum acute, sub-chronic, and chronic concentration by sampling location:

Site	Highest 24h Conc (ppb)	% of SL	Highest 90d Conc. (ppb)**	% of SL**	2021 Average Conc. (ppb)	% of SL
Delhi	9.37	8.5	2.29	76	0.68	34
Oxnard	0.57	<1	0.073	2.4	0.026	1.3
Parlier	24.93	22.7	3.30	110	1.55	78
Santa Maria	0.8	<1	0.23	7.3	0.077	3.9
Shafter	2.30	2.1	4.5**	146**	0.16	8
Watsonville	0.40	<1	0.19	6.2	0.059	3

* Screening levels are 110 ppb for acute exposure, 3 ppb for sub-chronic exposure, 2 ppb for chronic exposure
**The 90-day rolling concentrations include detections from 2020; this 90-day concentration represents 10/16/20 – 01/07/21.

This summary of the 1,3-D ambient air monitoring results shows the maximum observed air concentrations being compared to the screening levels for each concentration. 1,3-D has three

different screening levels acute, subchronic, and chronic. The screening levels are 110 ppb for acute exposure, 3 ppb for subchronic exposure, and 2 ppb for chronic exposure.

DPR compares the highest 24-hour air concentration against the 110 ppb for acute exposure to determine the percentages. It shows that in 2021 there is a range of acute concentrations from 0.4 to 25 ppb. The percentages range from less than 1 percent to about 23 percent for the year. All sites were below the acute screening level for the year.

DPR calculates the second screening level for subchronic exposure based on the highest 90 day rolling average for 13 weeks of data. The subchronic concentrations range from 0.07 to 4.5 ppb for the year. There is an exceedance of subchronic exposure in Shafter at 4.5 which equates to 146 percent of the screening level and additionally in Parlier at 3.3 and 110 percent of the screening level. All other sites were below the screening level for the year.

The final exposure is chronic exposure and DPR calculates the average chronic exposure for each site to get this percentage. In 2021, the concentration ranges from 0.02 to 1.6 ppb for the year and all sites were below the chronic screening level for the year.

As mentioned earlier, 1,3-D has a regulatory target in addition to the three screening levels. 1,3-D is recognized as a human carcinogen by the state of California. Cancer risk can be estimated using air monitoring results by multiplying the normalized breathing rate of a human adult (nBR) times the mean lifetime (70-year) air concentration (LAC) multiplied by the cancer potency factor in humans (CPF_H). DPR has established a cancer risk regulatory goal of 1.00E-05 and by inserting DPR's cancer risk regulatory into the above equation, LAC can be solved for by dividing the cancer risk regulatory goal by nBR and CPF_H to get an LAC of 0.56 ppb.

Cancer Risk Estimates: 1,3-Dichloropropene

Community	Average conc. (ng/m^3)	Cancer risk estimate	Cancer risk target	Percent target %
Delhi	1,089	4.27E-06	1.00E-05	43
Oxnard	533	2.09E-06	1.00E-05	21
Parlier	5,265	2.06E-05	1.00E-05	207
Santa Maria	565	2.21E-06	1.00E-05	22
Shafter	2,221	8.70E-06	1.00E-05	87
Watsonville	440	1.72E-06	1.00E-05	17

This figure shows the cancer risk estimates for each site. The target percentages ranged from 17 percent to 207 percent. The available data shows that Parlier has exceeded the estimate for lifetime exposure.

2021 1,3-D Ambient Air Monitoring Results

Annual concentration by sampling location as compared to regulatory target concentration for cancer risk:

Community	Air Concentration (ppb)											Overall Average concentration (ppb)	Lifetime (70-year) regulatory target concentration (ppb)
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
Delhi	--	--	--	--	--	--	0.13	0.19	0.15	0.46	0.68	0.32	0.56
Oxnard	--	0.19	0.17	0.09	0.21	0.11	0.11	0.06	0.06	-	0.026	0.12	0.56
Parlier	--	--	--	--	--	--	0.62	2.94	0.27	0.51	1.55	1.16	0.56
Santa Maria	0.16	0.19	0.19	0.11	0.11	0.12	0.08	0.06	0.05	0.11	0.077	0.12	0.56
Shafter	0.23	0.08	0.57	0.20	0.18	0.34	0.11	1.52	0.13	1.8	0.16	0.49	0.56
Watsonville		0.16	0.13	0.09	0.12	0.07	0.09	0.05	0.06	0.12	0.059	0.096	0.56

The figure above shows that Shafter and Santa Maria have the most available data of 11 years. The overall lifetime averages from all of the locations range from .096 to 1.16 ppb. All the locations were below the lifetime regulatory target concentration except Parlier.

CDPR monitored 1,3-D air concentrations in six communities in 2021. 1,3-D was detected in the communities of Delhi, Parlier, Santa Maria, Shafter, Oxnard, and Watsonville. The study measured 2021 air concentrations of 6 sampling sites that did not exceed human health screening levels for acute or chronic exposures. Parlier and Shafter experienced an exceedance for subchronic exposures. Parlier experienced an exceedance for lifetime exposures.

In summary, the 13-week average of chloropicrin in Oxnard was 0.42 ppb (subchronic screening level is 0.35 ppb). The detection frequencies of methyl bromide (all less than one percent of acute regulatory target value of 1 ppb) were higher than in previous years. The 13-week average of 1,3-D in Parlier was 3.3 ppb (subchronic screening level is 3 ppb). The overall average concentration of the five years of data, of 1,3-D in Parlier was 1.6 ppb (the 70-year average regulatory target is 0.56 ppb). DPR recognizes concerns from the monitoring data and is currently developing a regulation to address acute and cancer risks from 1,3-D.

Committee Comment

Lynn Baker followed up Maziar's mention of methyl bromide's low concentration and it showing up in greater frequency to ask what is the source since it has been a few years since California had any critical use exemptions for soil fumigation using methyl bromide. Is this due to post harvest commodity fumigation or is there a soil fumigation going on? Can DPR give an update to the PREC after working with the county commissioners to try to evaluate the possible source of these higher frequencies.

Maziar Kandelous responded stating that those actions are currently taking place. DPR is working to investigate these as well as working with the California Department of Food and Agriculture Laboratory (CDFAL) to see what the source is. Once everything has been answered there will be a presentation on the findings.

Brian Gress stated that it appears that there is active investigation of some of these exceedances but is it known if these come from legal agricultural use or is that something that is still being investigated?

Maziar Kandelous explained that there is investigation on these and currently going through Pesticide Use Records (PUR) data and gradually collecting those from the commission office and once all together it will be reviewed to know why this happened. Then the findings will be presented.

Garrett Keating asked why one in 100,000 is used as the risk level?

Jazmin Gonzalez mentioned that this is stated in the 2016 Risk Management Directive (RMD). Tulio Macedo interjected to state that an answer will be provided after the presentation.

The following answer was emailed to Garrett following the presentation:

> It was confirmed with the Air Program that the "cancer risk goal of one for a 70-year lifetime exposure means the risk of contracting cancer should be no more than one individual for every 100,000 people" (2016 1,3-D RMD). The RMD goes on to state "DPR will set a regulatory target concentration of 0.56 parts per billion. This concentration is a 70-year average that should be achieved at least 95 percent of the time and is based upon: the conclusion that the mode of action is portal of entry, assumption of 70-year residency time, and assumption of low mobility."

Public Comment

John Bottorff from CleanAir4Kids.org asked what is DPRs plan to expand air monitoring, especially considering drift?

Maziar Kandelous clarified that the air monitoring data are not for drift collection but for collecting pesticides that are in the air. There are other means to see if drift is happening such as a field study to see if there is any drift when the application occurs as well as collection to see how much drift comes off that application. There are differences on what AMN does in terms of taking air samples rather than the drift.

Lynn Baker clarified that the question might be referring to all offsite movement.

> Maziar Kandelous stated that the group always looks for opportunities for expansion whenever the resources become available. The region of highest use becomes a monitoring site to capture the most conservative scenario happening across the state.

Mike Ziess asks what has DPR's investigation indicated about probable causes of the 1,3-D exceedances?

> Maziar Kandelous mentions again that that is being investigated and currently looking at PUR data as well as with the Agricultural Commissioners, but the work has not been completed yet.

Anne Katten asks has the department notified neighboring households, schools, and businesses of subchronic and cancer risk exceedances in Oxnard, Parlier, and Shafter?

> Maziar Kandelous answers stating that the way it is being done is all the data is available on the website to make the data available to the public as well as through the AMN report and AB 617 group.

Mike Zeiss states in the introduction, it was stated that one of the goals of the 1,3-D study was to evaluate the effectiveness of potential mitigation methods. Are there plans to present the results of that portion of the study to PREC?

> Mazair Kandelous states that that data was just presented. The monitoring data is evaluated and then shared with the public and if exceedances occur, those will be evaluated further.

Ann Katten asks has there been any uses of methyl bromide under experimental permits in areas where exceedances were found?

> Mazair Kandelous repeats that this is in the earliest stage of this investigation. Notice of Intents are being collected and reviewing the PUR data.

Kathleen Kilpatrick stated that she is familiar with the Watsonville monitoring and wanted to point out that it is placed on a school site that is in a rural location in Monterey County near the county line facing the ocean. She mentioned it is probably not typical of the air flow of the valley though is in an area where a lot of strawberries grown so fumigants are used. The field in front of the school was converted to organic because of the pressure from the school community. She suggested more monitoring in the Pajero valley due to the use of fumigants, by far the highest in the state overall. There is an agricultural commissioner that has instituted fairly strict tarping systems which may or may not have a positive impact on ambient air exposure, but it can’t be measured if there aren’t properly placed air monitors.

Sarah Aird asks can DPR explain what steps they've taken to alert local people to the exceedances of Telone and what steps DPR has taken to reduce community exposure to Telone as a result of the exceedances?

> Maziar Kandelous states again that work is being shared with the communities and address their concerns. Regulation is being worked on to address these data findings.

3. **Agenda Items for Next Meeting**

The next meeting is scheduled for September 16, 2022 at 10:00 a.m. This meeting will be held virtually on the Zoom platform and broadcast live on the CalEPA webcast page. <video.calepa.ca.gov/>

4. **Adjourn**