



May 16, 2024

Dr. Tulio Macedo, Chair
Pesticide Registration and Evaluation Committee (PREC)
California Department of Pesticide Regulation
via email to: Tulio.Macedo@cdpr.ca.gov

SUBJECT: Risk assessment and mitigation for PREC agenda July 19, 2024

Dear Dr. Macedo:

We are writing to request that you agendaize progress reports on DPR's risk assessment and mitigation efforts for the PREC meeting scheduled for July 19, 2024.

That meeting date represents one year since DPR's most recent public report about its risk assessment process. At PREC's July 21, 2023 meeting, Primary State Toxicologist Andrew Rubin explained, *for the second time*, how DPR plans to develop a prioritized list of active ingredients for risk assessment¹. Essentially, he repeated the same promises made a year earlier². The public and PREC deserve to hear how DPR is progressing on that vital task. We hope that after all this time, DPR will be able to present specific plans about which active ingredients will undergo risk assessment on which dates, not merely another recap of how such plans might, someday, be developed.

PREC's upcoming meeting on July 19, 2024 will also represent three years since we initially requested a PREC presentation about mitigation actions to reduce risks that DPR's own risk assessments have *already* identified as excessive. On July 2, 2021 we submitted [an open letter](#) requesting a mitigation report to PREC³. Despite our repeated requests to you since, PREC still has not received any presentation about DPR's mitigation priorities and procedures.

In the 13 years since DPR's [2011 list](#) of priority pesticide active ingredients⁴, DPR has posted draft or completed risk characterization documents (RCDs) for about 18 active ingredients. Of those, DPR initiated actions to mitigate risks for about seven active ingredients. For details, please see the attached Table 1.

Those risk assessments, when followed by mitigation actions, represent a substantial contribution to protecting the health of Californians. In particular, we concur with DPR's decision to focus much of current risk assessment and mitigation efforts on the soil fumigants. That includes the decision to complete a risk assessment on the fumigant AITC to inform the decision on whether to allow registration in California. As highly toxic and volatile pesticides, fumigants pose high hazards, and thus are appropriate targets for DPR's risk assessment and mitigation.

Nonetheless, DPR's results are not sufficient to address its mission. Firstly, the pace of risk assessment is too slow, for the following reasons:

- 1) **DPR currently manages 1,040 unique active ingredients.**⁵ At the rate of 18 assessments per 13 years, it would take decades to assess even a fraction of this total.
- 2) DPR's [most recent public prioritization, in 2014](#)⁶, listed the **top-10 priority active ingredients** for risk assessment. All 10 active ingredients are in active use today, yet **all 10 are still waiting for DPR to initiate the risk assessment process.** DPR's more-comprehensive 2011 assessment⁴ listed **82 active ingredients as "high" priority for risk assessment.** Most of the 82 are still in active use, and DPR has initiated risk assessment for only a handful (Table 1).

Those previous priority lists might seem like yesterday's news, but neglecting them puts today's children at risk. A 2021 study of pesticide exposure to pregnant mothers identified eight pesticide active ingredients as associated with subsequent infant cancer.⁷ One of the eight, dimethoate, was on DPR's 2014 top-ten list. Another two were classified as "moderate priority" on DPR's 2011 list: kresoxim-methyl and propiconazole. Unfortunately, DPR has not yet conducted a risk assessment of any of the three - even though all three have active California registrations.

- 3) To that daunting backlog must be added at least some of the new active ingredients that DPR is registering at a rate of roughly 15 each year.⁸

Similar to risk assessment, the recent pace of mitigation simply is not adequate to protect Californians' health. Even after *DPR's own risk assessment* has identified unacceptable risks, **DPR routinely takes more than 4 more years to put mitigation protections into place** (Table 1). Those years of delay represent illness and health impacts that can and must be prevented. Seven partial mitigations in 13 years is not sufficient to fulfill DPR's mission.

What can be done to solve these problems? *We think it is incumbent on DPR to answer that question.* Indeed, according to the recently-published [Sustainable Pest Management Roadmap](#), one of the "keystone actions" required for sustainable pest management includes, "improve processes for evaluating currently registered pesticides."⁹

PREC could help achieve that goal, by resuming its traditional role of receiving and publicly reviewing progress reports on risk assessment. Therefore, **we recommend that PREC receive annual progress reports from DPR on risk assessment.** The reports should include:

- What process is DPR using to prioritize specific pesticides for risk assessment?

- What is the current list of pesticides that are highest priority for risk assessment?
- How many risk assessments will need to be done per year to keep up with the list?
- And, what progress is DPR making towards that target?

Equally important, PREC needs to promote transparency about how DPR implements mitigation once risk assessments find unacceptable risks. As for risk assessment, we recommend annual progress reports. The mitigation reports should include:

- The list of active ingredients for which DPR risk assessments already have identified unacceptable risks,
- How much time has elapsed since each of those risk assessments, and
- Specific plans and target dates for implementing mitigation for each active ingredient.

As we stated earlier, *three years* have elapsed since [our letter](#) requesting a PREC presentation on mitigation. Despite our repeated requests to you since, PREC still has not received any presentation. We find it ironic that DPR recently invested staff time to produce a new version of its [“continuous evaluation” factsheet](#)¹⁰, giving the impression that mitigation is routine and punctual. As shown in Table 1, this is false. We call on DPR to present a mitigation plan to PREC that lives up to the claims made in the new factsheet.

Thank you in advance for resuming PREC's traditional role of promoting transparency about DPR's risk assessment and mitigation. This is one of the best ways for PREC to live up to its [stated mission](#): "to foster communication and understanding on pesticide issues".¹¹ As an important step, we ask you to include these two topics on the formal agenda of the July 19, 2024 PREC meeting. Indeed, both risk assessment and mitigation should be annual topics at every July PREC meeting.

Yours sincerely,



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Table 1. Pesticide active ingredients prioritized by DPR for human-health risk assessment¹² Updated 5/12/2024

Active ingredient (AI)	DPR priority rankings:		Risk assessment status 2024 ¹³	Mitigation status 2024 ¹³
	in 2014 ⁶	in 2011 ⁴	(risk evaluations more recent than 2011)	(protective actions more recent than 2011)
Mancozeb	1	High	none listed	none listed
Paraquat dichloride	2	High	none listed	none listed ¹⁴
Dimethoate	3	High	none listed	none listed
Iprodione	4	High	none listed	none listed
Propylene oxide	5	High	none listed	none listed
Ziram	6	High	none listed	none listed
Glufosinate-ammonium	7	High	none listed	none listed
Cypermethrin	8	Moderate	none listed	none listed
Glutaraldehyde	9	High	none listed	none listed
PCNB	10	High	none listed	none listed
DPR <u>did</u> complete at least draft risk assessments on 18 AIs in the 13 years since the 2011 priority rankings (other risk assessments may be underway)¹⁵:				
Acephate	<i>[not listed]</i>	High	Addendum to RCD July 2013; recalc of exposure Mar 2018; review new products May 2019	Product-specific changes to Federal labels ¹⁶ underway in July 2021 [8 years after RCD]
Allyl isothiocyanate (AITC)	<i>[not listed]</i>	<i>[not listed]</i>	RCD April 2022 ¹⁷	Not applicable <i>[as of 5/13/2024, DPR has not approved the soil fumigant registration]</i> ¹⁸
Carbaryl	<i>[not listed]</i>	High	RCD June 2014 ¹⁹	Expanded designation as restricted material June 2020 ²⁰ [6 years after RCD]
Chloropicrin	<i>[not listed]</i>	High	RCD Nov 2012; update to RCD Aug 2016	CA-specific label changes Sept 2017 ²¹ . [5 years after RCD]. Recommended permit conditions, last updated 2023 ²²

Chlorpyrifos	<i>[not listed]</i>	High	Draft RCD Dec 2015; determination as Toxic Air Contaminant Aug 2018	Cancellation of many, but not all, products Oct 2019 ²³ [4 years after RCD]
Active ingredient (AI)	DPR priority rankings:		Risk assessment status 2024¹³	Mitigation status 2024¹³
	in 2014⁶	in 2011⁴	(risk evaluations more recent than 2011)	(protective actions more recent than 2011)
Cyfluthrin	<i>[not listed]</i>	High	Problem Formulation Document Jan 2018 ²⁴ RCD pending ²⁵	none listed
Deltamethrin & tralomethrin	<i>[not listed]</i>	<i>[not listed]</i>	Addendum to RCD Oct 2014	none listed <i>["Possible Mitigation Needs" memo Feb 2015, but no action yet]</i>
1,3-Dichloropropene	<i>[not listed]</i>	High	RCD Dec 2015; revised risk parameters for tarp cutters Dec 2022	pending ²⁶
Dicrotophos	<i>[not listed]</i>	<i>[not listed]</i>	RCD Dec 2016 ²⁷	DPR decided not to grant the SLN registration Oct 2016 ²⁷ [same year as RCD]
Fipronil	<i>[not listed]</i>	High	Draft RCD Jan 2021 ²⁸	none listed
Imidacloprid	<i>[not listed]</i>	Moderate	Draft EA and RCD March 2024 ²⁹ . Initiated reevaluation of non-ag uses March 2024 ¹² .	none listed ³⁰ <i>[mitigation for pollinators but not human health]</i>
Methomyl	<i>[not listed]</i>	Moderate	Draft RCD Nov 2015 <i>[still pending]</i> ³¹	none listed
Methyl isothiocyanate MITC (dazomet, metam sodium, metam potassium)	<i>[not listed]</i>	High	RCD July 2004; Exposure update Aug 2016	Recommended permit conditions 2000 - 2015 ³²
Phosphine	<i>[not listed]</i>	<i>[listed as underway]</i>	RCD June 2014	none listed
Propanil	<i>[not listed]</i>	High	RCD Feb 2019	none listed

Propargite	[not listed]	High	RCD May 2014; recalc of handler and re-entry worker risks Sept 2021	none listed
Simazine	[not listed]	Moderate	RCD June 2013	none listed
Sulfuryl fluoride	[not listed]	[not listed]	Addendum to RCD May 2020	none listed ³³ ["Mitigation scoping" memo Dec. 2021, but no results yet]

References and notes

Last updated 5/12/2024; all URLs were successfully accessed on that date, with the exception of references "4" and "6". Archived versions of those two references are available:

<https://www.pesticide-reform.org/wp-content/uploads/2023/03/CDPR-2011-prioritization-for-risk-characterization-Report-52.pdf>

<https://www.pesticide-reform.org/wp-content/uploads/2024/01/CDPR-2014-top-10-prioritization-for-risk-assessment.pdf>

EA = Exposure Assessment

RCD = Risk Characterization Document

RMD = Risk Management Directive

¹ Rubin, A.L. 2023. *Prioritizing Pesticides for Human Health Risk Assessment*. Presentation at July 21, 2023 meeting of CDPR's Pesticide Registration and Evaluation Committee (PREC). Presentation available by public records request. Summarized in meeting minutes, available at: <https://www.cdpr.ca.gov/docs/dept/prec/2023/072123minutes.pdf>

That same meeting featured a separate presentation about a separate DPR effort to prioritize pesticide active ingredients for replacement with less-hazardous pest management practices or products: Teerlink, J. 2023. *Developing DPR's Sustainable Pest Management Prioritization Process*. Presentation at July 21, 2023 meeting of CDPR's Pesticide Registration and Evaluation Committee (PREC). Presentation available by public records request. Summarized in meeting minutes, available at: <https://www.cdpr.ca.gov/docs/dept/prec/2023/072123minutes.pdf>

² Rubin, A.L. 2022. *New Approaches to Prioritizing Pesticides for Risk Assessment*. Presentation at July 15, 2022 meeting of CDPR's Pesticide Registration and Evaluation Committee (PREC). Presentation available by public records request. Summarized in meeting minutes, available at: <https://www.cdpr.ca.gov/docs/dept/prec/2022/071522minutes.pdf>

³ Californians for Pesticide Reform, and California Rural Legal Assistance Foundation. 2021. *PREC should promote transparency about DPR's risk assessment and mitigation*. Open letter dated July 2, 2021. Available at: <https://www.pesticide-reform.org/wp-content/uploads/2021/07/FINAL-Open-letter-to-PREC-re-Risk-Assessment-July-2021-1.pdf>

⁴ CDPR. 2011. *Prioritization and status of active ingredients for risk characterization: Report #52*. Memorandum from Gary Patterson, Chief, Medical Toxicology Branch to Pesticide Registration and Evaluation Committee (PREC) dated July 15, 2011. Posted on CDPR's public website (accessed 10/27/2017): http://www.cdpr.ca.gov/docs/dept/prec/2011/prec_letter_report_52_20110916.pdf

⁵ CDPR. 2024. *Actively Registered Active Ingredients (AI) by Common Name*. Available at: <https://www.cdpr.ca.gov/docs/label/actai.htm>

⁶ CDPR. 2014. *Final notice on active ingredients prioritized for risk assessment initiation*. Interested Parties memorandum dated September 12, 2014. Posted on CDPR's public website (accessed 2/24/2017): http://www.cdpr.ca.gov/docs/risk/final_%20notice_top_10_ais.pdf
This notice lists only the **top-10 highest priority active ingredients**. To the best of our knowledge, this is DPR's most recent public document about prioritization.

⁷ Lombardi, C. et al. 2021. Residential proximity to pesticide application as a risk factor for childhood central nervous system tumors. *Environmental Research* 97. Available for purchase at: <https://doi.org/10.1016/j.envres.2021.111078> [Abstract and “section snippets” can be downloaded free of charge]

⁸ CDPR. 2022. *New active ingredients registered in California during 2021*. Available at: <https://www.cdpr.ca.gov/docs/registration/ais/newreg/2021.pdf> and CDPR. 2023. *New active ingredients registered in California during 2022*. Available at <https://www.cdpr.ca.gov/docs/registration/ais/newreg/2022.pdf> and CDPR. 2024. *New active ingredients registered in California during 2023*. Available at: <https://www.cdpr.ca.gov/docs/registration/ais/newreg/2023.pdf>

⁹ Sustainable Pest Management Work Group and Urban Subgroup. 2023. *Accelerating sustainable pest management: A roadmap for California*. Available at: https://www.cdpr.ca.gov/docs/sustainable_pest_management_roadmap/spm_roadmap.pdf

¹⁰ CDPR. 2024. *How continuous evaluation informs DPR actions to mitigate pesticide risks*. Available at: <https://www.pesticidereform.org/wp-content/uploads/2024/05/continuous-evaluation-factsheet-4-12-24.pdf>

¹¹ CDPR. 2018. *Pesticide Registration and Evaluation Committee (PREC) Charter*. Available at: <https://www.cdpr.ca.gov/docs/dept/prec/preccharter.pdf>

¹² CDPR. 2024. *Notice of initiation of reevaluation of neonicotinoid products intended for non-agricultural use on non-production, outdoor ornamental plants, trees, or turf*. CA Notice 2024-05. Available at: <https://www.cdpr.ca.gov/docs/registration/canot/2024/ca2024-05.pdf>

In addition to imidacloprid, CDPR has initiated reevaluations of the neonicotinoids acetamiprid, clothianidin, dinotefuran, and thiamethoxam. Those AIs are not listed in Table 1 of this letter because their reevaluations have not yet generated any human-health risk assessments.

Related legislation: In October 2023, Governor Gavin Newsom signed into effect AB 363 (Chapter 520, Statutes of 2023) which added additional sections to FAC section 12838. Though most changes were intended to protect pollinators, the bill also required CDPR to evaluate the potential impacts of neonicotinoid pesticides on human health when used for non-production outdoor ornamental plants, trees, and turf. Source: <https://www.cdpr.ca.gov/docs/registration/canot/2024/ca2024-03.pdf>

¹³ CDPR. 2023. *Human health risk assessment and mitigation by active ingredient*. Available at: https://www.cdpr.ca.gov/docs/whs/active_ingredient/index.htm

¹⁴ CDPR has not implemented paraquat mitigation directly. In 2022, public health and environmental groups submitted formal requests asking CDPR to cancel paraquat's registration. CDPR has yet to respond.

Letter from CPR and Center for Biological Diversity: <https://www.pesticideform.org/wp-content/uploads/2024/05/CPR-and-CBD-letter-to-DPR-re-paraquat-Nov-2022.pdf>

Letter from Michael J. Fox Foundation: <https://www.pesticideform.org/wp-content/uploads/2024/05/20221104-pesticide-reevaluation-state-of-CA.pdf>

Letter from scientists and practitioners: <https://www.pesticideform.org/wp-content/uploads/2024/05/Scientist-and-practitioner-letter-to-CDPR-paraquat-Nov-2022.pdf>

Initially, it seemed that California handlers and residential bystanders might benefit from label changes being considered by USEPA in its 2021 Proposed Interim Registration Decision for Paraquat: <https://www.epa.gov/pesticides/epa-finalizes-new-stronger-safety-measures-pesticide-paraquat>

Label restrictions now require that certified applicators perform all applications, which is a beneficial added safety measure. However, the Interim Registration Decision as released in 2024 failed to include other safety measures that USEPA initially had proposed: <https://www.regulations.gov/document/EPA-HQ-OPP-2011-0855-0321> The agency expects to finalize the decision in January 2025.

¹⁵ Some CA Notices to Stakeholders announce initiation of risk assessments that are not listed within reference "13". For CA Notices to Stakeholders, see: <https://www.cdpr.ca.gov/docs/registration/canot/camenu.htm>

¹⁶ CDPR. 2021. *Acephate human health mitigation*. Presentation at July 16, 2021 meeting of CDPR's Pesticide Registration and Evaluation Committee. Presentation available via public records request. Summarized in meeting minutes, available at: <https://www.cdpr.ca.gov/docs/dept/prec/2021/071621minutes.pdf>

¹⁷ CDPR. 2022. *Allyl Isothiocyanate Risk Characterization Document Occupational and Bystander Exposures*. Available at: <https://www.cdpr.ca.gov/docs/risk/rcd/aitc-final-risk-characterization.pdf>

¹⁸ AITC has not had any active California registrations since 2013, but was evaluated as part of CDPR's review of proposed registration as a soil fumigant. Source: presentation at 9/18/2020 meeting of PREC. Presentation available via public records request. Summarized in meeting minutes, available at: https://www.cdpr.ca.gov/docs/dept/prec/2020/091820_minutes.pdf

As of May 2024, CDPR has not yet registered AITC as a soil fumigant product. The most recent CA Notice was in 2022: <https://www.cdpr.ca.gov/docs/registration/canot/2022/ca2022-13.pdf>

¹⁹ For carbaryl, in Nov 2016 CDPR announced plans to produce an addendum to the RCD, regarding cancer potency: <https://www.cdpr.ca.gov/docs/registration/canot/2016/ca2016-09.pdf> However, as of 5/12/2024 CDPR had not posted any addendum. Most recent CA Notice was in 2020: <https://www.cdpr.ca.gov/docs/registration/canot/2020/ca2020-07.pdf>

²⁰ Expanded restricted-material status for carbaryl was only intended to protect residential bystanders: <https://www.cdpr.ca.gov/docs/legbills/rulepkgs/19-003/19-003.htm>

²¹ Chloropicrin is also mitigated by USEPA's Sept 2017 changes to Federal product labels. Those changes are specific to use within California: CDPR. 2017. *Additional Labeling Requirements for Use of All Products Containing Chloropicrin as an Active Ingredient in California*. Available at: <https://www.cdpr.ca.gov/chloropicrin.htm>

²² CDPR. 2023. *Chloropicrin and Chloropicrin in Combination with Other Products (Field Soil Fumigation) Recommended Permit Conditions*. Available at https://www.cdpr.ca.gov/docs/enforce/compend/vol_3/append_k.pdf

²³ CDPR cancelled use and possession of many, but not all, chlorpyrifos products, effective 31 December 2020: https://www.cdpr.ca.gov/docs/chlorpyrifos/pdf/general_notice_append_o.pdf. As of 5/12/2024, six chlorpyrifos product labels still have active CA registrations.

Chlorpyrifos use for production agriculture is mitigated by 2018 recommended permit conditions: https://www.cdpr.ca.gov/docs/enforce/compend/vol_3/append_o.pdf

²⁴ CDPR. 2018. *Problem formulation document β -cyfluthrin cyfluthrin*. Available at: https://www.cdpr.ca.gov/docs/whs/pdf/cyfluthrin_problem_formulation.pdf

²⁵ CDPR. 2024. *Semiannual report summarizing the reevaluation status of pesticide products during the period of July 1, 2023, through December 31, 2023*. CA Notice 2024-03. Available at: <https://www.cdpr.ca.gov/docs/registration/canot/2024/ca2024-03.pdf>

²⁶ For 1,3-Dichloropropene, CDPR implemented several versions of recommended permit conditions during 2015 – 2017. However, those were only designed to address cancer risk to bystanders: https://www.cdpr.ca.gov/docs/whs/pdf/1,3-d_directive_mitigation.pdf

In October 2021, DPR promulgated a Risk Management Directive limited to acute [non-cancer] 1,3-D exposure to non-occupational bystanders: https://www.cdpr.ca.gov/docs/whs/pdf/1,3-d_directive_mitigation_exposure.pdf

To evaluate mitigation options, during 2020 - 2021 CDPR conducted field trials managed by CDPR's Environmental Monitoring Branch: https://www.cdpr.ca.gov/docs/risk/rcd/13-d_pilot_mitigation_options_march_2020.pdf and <https://www.cdpr.ca.gov/docs/dept/prec/2021/111921minutes.pdf>

During 2022-2023, CDPR developed regulations to mitigate acute and cancer risks to non-occupational bystanders. The regulations became effective on 1/1/2024: https://www.cdpr.ca.gov/docs/legbills/rulepkgs/22-005/1-3_dichloropropene_field_fumigation_requirements.pdf and <https://www.cdpr.ca.gov/docs/legbills/rulepkgs/22-005/22-005.htm>

In March 2024, CDPR issued a Risk Management Directive regarding cancer risk for occupational bystanders: https://www.cdpr.ca.gov/docs/whs/pdf/1,3-d_memo_030624.pdf

²⁷ Dicrotophos has not had any active California registrations since 1991, but was evaluated in 2016 because of an application for a Special Local Needs (SLN) registration to control brown stink bugs on cotton: <https://www.cdpr.ca.gov/docs/risk/rcd/dicrotophos.pdf>
CDPR did not grant the request, as no SLN registrations are listed for dicrotophos as of 5/12/2024 <https://apps.cdpr.ca.gov/sln/>

²⁸ CDPR. 2021 *Fipronil risk characterization document draft*. Available only via public records request at: https://www.cdpr.ca.gov/docs/whs/active_ingredient/fipronil.htm

²⁹ Imidacloprid draft EA and RCD are not posted on CDPR's website and are available only via Public Records Act request, per the following document: CDPR. 2024. *Notice of Initiation of Scientific Peer Review with Partner Agencies Following Completion of the Draft Risk Characterization Document and the Draft Exposure Assessment Document for the Non-Agricultural and Residential Uses of the Active Ingredient Imidacloprid*. CA Notice 2024-06. Available at: <https://www.cdpr.ca.gov/docs/registration/canot/2024/ca2024-06.pdf>

³⁰ New neonicotinoid regulations 3CCR 6990 through 6990.11 became effective 1 Jan 2024. However, those changes were not intended to protect human health. Rather, the intent was to protect pollinators. That is stated in the Initial Statement of Reasons: https://www.cdpr.ca.gov/docs/legbills/rulepkgs/22-001/22-001_dpr_oal_isor_neonics.pdf

The history of these regulations, including the final text, is available at:

<https://www.cdpr.ca.gov/docs/legbills/rulepkgs/22-001/22-001.htm>

³¹ For methomyl, most recent CA Notice was in 2018:

<https://www.cdpr.ca.gov/docs/registration/canot/2018/ca2018-25.pdf>

³² For MITC, 2015 is the most recent version of recommended permit conditions, which CDPR gradually developed via multiple versions during 2000 – 2015:

https://www.cdpr.ca.gov/docs/enforce/compend/vol_3/append_1.pdf

³³ For sulfuryl fluoride, the 2020 reference concentration may be higher than in 2006 RCD, which may have been used to justify lack of additional mitigation. See presentation at July 17, 2020 meeting of CDPR's Pesticide Registration and Evaluation Committee (PREC). Presentation available via public records request. Summarized in meeting minutes, available at:

https://www.cdpr.ca.gov/docs/dept/prec/2020/071720_minutes.pdf

In December 2021, CDPR announced its intent to validate the model AERFUM for sulfuryl fluoride, then use the model to simulate a range of structural-fumigation scenarios. Depending on the results, CDPR might explore mitigation options that could reduce air concentrations:

https://www.cdpr.ca.gov/docs/whs/pdf/sulfuryl_fluoride_mitigation_012221.pdf