



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

March 27, 2023

SUBJECT: Risk assessment and mitigation for PREC agenda July 21, 2023

Dear Mr. Macedo:

We are writing to request that you agendaize a progress report on DPR's risk assessment and mitigation efforts for the PREC meeting scheduled for July 21, 2023.

That meeting date represents one year since DPR's most recent public report about its risk assessment process. At PREC's July 15, 2022 meeting, Primary State Toxicologist Andrew Rubin outlined how DPR planned to develop a prioritized list of active ingredients for risk assessment.¹ The public deserves to hear how DPR is progressing on that vital task.

PREC's upcoming meeting on July 21, 2023 will also represent two years since we initially requested a PREC presentation about mitigation actions to reduce risks that DPR's own risk assessments have identified as excessive. On July 2, 2021 we submitted [an open letter](#) requesting a mitigation report to PREC.² Despite our repeated requests to you since, PREC still has not received any presentation about DPR mitigation.

In the 12 years since DPR's last report to PREC about prioritization,³ DPR has posted draft or completed risk characterization documents (RCDs) for about 16 active ingredients. Of those, DPR initiated actions to mitigate risks for about seven active ingredients. Mitigation typically is not initiated until a finalized RCD. 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. Here's why:

- **DPR currently manages 1,061 unique active ingredients.**⁴ At the rate of less than two risk assessments per year (16 assessments in 12 years), it would take decades to assess even a fraction

of this total.

- DPR's most recent public prioritization, in 2014⁵, listed the top-10 priority active ingredients for risk assessment. All 10 active ingredients are in active use today, and **all 10 are still waiting for DPR to initiate the risk assessment process**. DPR's more-comprehensive 2011 assessment³ 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 childhood cancer.⁶ One of the eight, dimethoate, was on DPR's 2014 top-ten list.⁵ Another two were classified as "moderate priority" on DPR's 2011 list: kresoxim-methyl and propiconazole.³ Unfortunately, DPR has not yet conducted a risk assessment of any of the three - even though all three have active California registrations.

- To that daunting backlog must be added at least some of the new active ingredients that DPR is registering at a rate of roughly 18 each year.⁷

As with 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 12 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*. 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."⁸

PREC could play a valuable role in helping DPR, and the public, track progress. 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?

In its 2015 review of DPR's risk assessment process, the National Research Council (NRC) recommended: "DPR should update its documentation of its priority-setting process to provide more details so that the public can understand the process better [including] indicating the opportunities for public input."⁹

To help implement this recommendation, PREC needs to resume its traditional role³ of receiving, and publicly reviewing, progress reports on risk assessment.

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

- The list of pesticides for which DPR risk assessments already have identified unacceptable risks,
- How much time has elapsed since each of those risk assessments, and

- Specific target dates for implementing mitigation.

It is up to DPR to find solutions for accelerating mitigation. But we think it is noteworthy that the NRC recommended:

"DPR should incorporate problem formulation and other relevant elements recommended in the 2009 National Research Council report so that a risk assessment can be designed to address the decisions that need to be made by managers and other stakeholders."⁹

A key perspective from the 2009 report that they cited is that, "Risk assessment should be viewed as a method for evaluating the relative merits of various options for managing risk rather than as an end in itself."¹⁰ Therefore, mitigation should immediately follow risk assessment.

In the recent example of fipronil, DPR did include mitigation options in the initial "Problem Formulation Document"¹¹ but did not evaluate mitigation options within the 2021 draft Risk Characterization Document.¹² Instead, that RCD was once again structured as if risk assessment was an end in itself. Now more than two years have passed without any mitigation to reduce the unacceptable risks identified by the fipronil RCD.

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.¹³ As an important step, we ask you to include this topic on the formal agenda of the July 21, 2023 PREC meeting. Indeed, risk assessment and mitigation should be annual topics at every July PREC meeting.

Yours sincerely,



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Attachments: Table 1: Pesticide active ingredients prioritized for risk assessment by DPR
References and notes

Table 1. Pesticide active ingredients prioritized for risk assessment by DPR
Updated 3/20/2023

Active ingredient (AI)	DPR priority rankings:		Risk assessment status 2023 ¹⁴ (risk evaluations more recent than 2011)	Mitigation status 2023 ¹⁴ (protective actions more recent than 2011)
	in 2014 ⁵	in 2011 ³		
Mancozeb	1	High	none listed	none listed
Paraquat dichloride	2	High	none listed	none listed ¹⁵
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 did complete at least draft risk assessments on 16 AIs in the 12 years since 2011 (others may be underway)¹⁶:				
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 ¹⁷ underway in July 2021 [8 years after RCD]
Allyl isothiocyanate (AITC)	<i>[not listed]</i>	<i>[not listed]</i>	RCD April 2022 ¹⁸	none listed <i>[as of 3/20/2023, DPR has not approved the soil fumigant registration]¹⁹</i>
Carbaryl	<i>[not listed]</i>	High	RCD June 2014 ²⁰	Expanded designation as restricted material June 2020 ²¹ [6 years after RCD]
Chloropicrin	<i>[not listed]</i>	High	RCD Nov 2012; update to RCD Aug 2016	Recommended permit conditions Feb 2017 ²² [5 years after RCD]
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]
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>

Active ingredient (AI)	DPR priority rankings:		Risk assessment status 2023 ¹⁴ (risk assessments more recent than 2011)	Mitigation status 2023 ¹⁴ (protective actions more recent than 2011)
	in 2014 ⁵	in 2011 ³		
1,3-Dichloropropene	<i>[not listed]</i>	High	RCD Dec 2015; revised risk parameters for tarp cutters Dec 2022	pending ²⁴
Dicrotophos	<i>[not listed]</i>	<i>[not listed]</i>	RCD Dec 2016 ²⁵	DPR decided not to grant the SLN registration Oct 2016 ²⁵ [same year as RCD]
Fipronil	<i>[not listed]</i>	High	Draft RCD Jan 2021 ¹²	none listed
Methomyl	<i>[not listed]</i>	Moderate	Draft RCD Nov 2015 <i>[still pending]</i> ²⁶	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 ²⁷
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	<i>[not listed]</i>	High	RCD May 2014; recalculation of handler and re-entry worker risks Sept 2021	none listed
Simazine	<i>[not listed]</i>	Moderate	RCD June 2013	none listed
Sulfuryl fluoride	<i>[not listed]</i>	<i>[not listed]</i>	Addendum to RCD May 2020	none listed ²⁸ <i>["Mitigation scoping" memo Dec. 2021, but no results yet]</i>

References and notes

Last updated 3/20/2023; unless otherwise stated, all URLs were successfully accessed on that date.

RCD = Risk Characterization Document

RMD = Risk Management Directive

¹ Rubin, A.L. 2021. *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>

² 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.pesticidereform.org/wp-content/uploads/2021/07/FINAL-Open-letter-to-PREC-re-Risk-Assessment-July-2021-1.pdf>

³ 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

This memorandum lists **82 high-priority**, 143 moderate-priority, and 98 low-priority active ingredients.

⁴ CDPR. 2023. *Actively Registered Active Ingredients (AI) by Common Name*. Available at:

<https://www.cdpr.ca.gov/docs/label/actai.htm>

⁵ 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.

⁶ Lombardi, C. *et al.* 2021. Residential proximity to pesticide application as a risk factor for childhood central nervous system tumors. *Environmental Research* 97.

<https://doi.org/10.1016/j.envres.2021.111078>. Abstract and “section snippets” available at:

<https://www.sciencedirect.com/science/article/abs/pii/S0013935121003728?via%3Dihub>

⁷ 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>

⁸ 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

⁹ National Research Council. 2015. *Review of California's Risk-Assessment Process for Pesticides*. Available at: <https://www.nap.edu/catalog/21664/review-of-californias-risk-assessment-process-for-pesticides>

¹⁰ National Research Council. 2009. *Science and decisions: Advancing risk assessment*. Available at: <https://www.nap.edu/catalog/12209/science-and-decisions-advancing-risk-assessment>
Reference “v” explicitly refers to this document within its recommendations.

¹¹ CDPR. 2017. *Problem formulation document fipronil*. Available at: <https://www.cdpr.ca.gov/docs/risk/rcd/fipronil.pdf>

¹² 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

¹³ CDPR. 2018. *Pesticide Registration and Evaluation Committee (PREC) Charter*. Available at: <https://www.cdpr.ca.gov/docs/dept/prec/preccharter.pdf>

¹⁴ CDPR. 2023. *Human health risk assessment and mitigation by active ingredient*. Available at: https://www.cdpr.ca.gov/docs/whs/active_ingredient/index.htm

¹⁵ Although CDPR has not implemented paraquat mitigation directly, handlers and residential bystanders ultimately may benefit from label changes proposed by USEPA in its 2021 Interim Registration Decision for Paraquat: <https://www.epa.gov/pesticides/epa-finalizes-new-stronger-safety-measures-pesticide-paraquat>

¹⁶ Some CA Notices announce initiation of risk assessments that are not listed within reference 14. For CA Notices, see: <https://www.cdpr.ca.gov/docs/registration/canot/camenu.htm>

¹⁷ 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>

¹⁸ 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>

¹⁹ 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 March 2023, CDPR has not yet registered AITC the soil fumigant product. Most recent CA Notice as of 3/20/2023: <https://www.cdpr.ca.gov/docs/registration/canot/2022/ca2022-13.pdf> .

²⁰ 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 3/20/2023 CDPR had not posted any addendum. Most recent CA Notice: <https://www.cdpr.ca.gov/docs/registration/canot/2020/ca2020-07.pdf>

²¹ 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>

²² Chloropicrin is also mitigated by USEPA's Sept 2017 changes to Federal product labels. Those changes are specific to use within California: <https://www.cdpr.ca.gov/chloropicrin.htm>

²³ CDPR canceled 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 3/20/2023, 16 chlorpyrifos product labels still have active CA registrations, including some manufacturing and master labels. Chlorpyrifos use for production agriculture is mitigated by 2019 recommended permit conditions: https://www.cdpr.ca.gov/docs/enforce/compend/vol_3/append_o.pdf

²⁴ 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>

In November 2022, CDPR proposed draft regulations to mitigate acute and cancer risks to non-occupational bystanders: <https://www.cdpr.ca.gov/docs/legbills/rulepkgs/22-005/22-005.htm>. However, in March 2023, a Superior Court judge ruled that DPR must revise the draft regulations to also protect occupational bystanders: <https://www.pesticidereform.org/wp-content/uploads/2023/03/Vazsquez-Order3.9.23.pdf>

²⁵ 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 apparently did not grant the request, as no SLN registrations are listed for dicrotophos as of 3/20/2023: <https://apps.cdpr.ca.gov/sln/>

²⁶ For methomyl, most recent CA Notice as of 3/20/2023: <https://www.cdpr.ca.gov/docs/registration/canot/2018/ca2018-25.pdf>

²⁷ 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

²⁸ 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