



Julie Henderson, Director  
California Department of Pesticide Regulation  
Via email: [julie.henderson@cdpr.ca.gov](mailto:julie.henderson@cdpr.ca.gov)

July 20, 2022

Dear Director Henderson,

We have reviewed the DPR factsheet entitled "Review and Actions Taken to Regulate Pesticides Named in Recent UCLA Studies" (March 2022) and wish to bring to your attention a number of inaccuracies and omissions. As you know, the twin studies by Park et al<sup>1</sup>. and Lombardi et al<sup>2</sup>. found a statistically significant increase in childhood brain tumors and leukemia associated with prenatal residence within 2.5 miles of applications of fifteen pesticides, fourteen of which are still approved for use in California. We recommend several specific actions the department should take to protect children from exposure and to increase transparency, summarized at the end of this letter.

**Restricted materials:**

The factsheet states that 5 of the 15 pesticides are designated as Restricted Material. However, it is misleading to describe this designation as an action that limits the use of these pesticides, since DPR has promulgated recommended permit conditions for only one of those restricted materials, metam-sodium<sup>3</sup>.

Without permit conditions or other specific regulatory requirements, designating a particular pesticide a restricted material does little or nothing to protect fieldworkers or nearby residents from agricultural applications. Permit conditions, regulations or label restrictions are needed to reduce the use patterns that contributed to the prenatal exposures documented in the studies.

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<sup>1</sup> **Park et al. 2020:** complete text of paper is available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7174091/>

<sup>2</sup> **Lombardi et al. 2021:** abstract and "section snippets" are available at <https://www.sciencedirect.com/science/article/abs/pii/S0013935121003728?via%3Dihub>

<sup>3</sup> **Permit conditions:** DPR's recommended (non-binding) permit conditions are available in the Appendices of Enforcement Compendium Vol. 3 [https://www.cdpr.ca.gov/docs/enforce/compend/vol\\_3/rstrct\\_mat.htm](https://www.cdpr.ca.gov/docs/enforce/compend/vol_3/rstrct_mat.htm)

In addition, it is worth noting that diuron users require permits only for applications within Ground Water Protection areas. DPR's parenthetical explanation, that designation as a California Restricted material means that it "requires submission of a notice of intent and an approved permit issued by the local County Agricultural Commissioner prior to application," is incomplete and misleading in regards to diuron.

### **Risk Assessments/Reevaluations**

According to the factsheet, DPR has completed Risk Assessments or Reevaluations for seven of the 15 pesticides. Not stated, however, is the fact of those seven Risk Assessments, only metam sodium's has resulted in any mitigations. In each case, years have elapsed without mitigations - up to 34 years in the case of phosmet. Diagnosis without treatment cannot be called "action." Conducting risk assessments is an important step, but does not, in itself, protect workers or residents unless it results in mitigations to address the risk.

Furthermore, five of the pesticides for which no risk assessments have been conducted were selected by DPR as priorities for risk assessment on DPR's most recent publicly-disclosed prioritization lists:

- The organophosphate dimethoate was listed as a top-10 priority in 2014
- Kresoxim-methyl was listed as a "moderate priority" in 2011
- Paraquat dichloride was listed as a top-10 priority in 2014
- Propiconazole was listed as a "moderate priority" in 2011
- Triforine was listed as a "moderate priority" in 2011

On July 15, 2022, DPR proposed to the Pesticide Registration and Evaluation Committee a protocol for producing yet another prioritization list, but with no timeline or target for completing Risk Assessments and no acknowledgement that two prior prioritization lists (2011 and 2014) have languished for the most part ignored. Not a single one of the ten pesticides prioritized in 2014 has had a risk assessment, and only a handful of the 82 listed as "high priority" in 2011. Without a concrete plan for clearing the growing backlog, more prioritization does nothing to protect communities from harm. We need action.

We therefore ask that you instruct staff to prepare guidelines, including time frames, for moving from a completed risk assessment to mitigation, and to present those guidelines at a PREC meeting within the next six months.

### **Environmental Monitoring**

DPR's factsheet cites inclusion of 9 of the pesticides in its groundwater monitoring program, and 1 pesticide in its air monitoring program, as "Actions Taken by DPR." By itself, inclusion of pesticides on a monitoring list does nothing to protect communities from harm.

DPR states that "the department will take further action" in the event of groundwater detections or air detections above a specified level. While we certainly agree that the purpose of monitoring should be to mitigate harm when air or water contamination is detected, DPR's recent track record is not encouraging on this point.

We ask DPR to provide an account of “further action” taken by DPR to reduce exposure in the case of each groundwater detection or air monitoring exceedance in the past five years. Unless and until DPR commits to linking its monitoring results to prompt action, monitoring alone will do nothing to keep communities safe from exposure to cancer-causing pesticides.

### **Data Transparency and Timeliness**

For five of the pesticides (bromacil, chlorothalonil, diuron, linuron and phosmet), there is no convenient way for the public to know whether DPR’s risk assessment revealed cancer risks because the completed risk assessments are no longer posted on DPR’s public website.

Likewise, the 2011 and 2014 prioritization lists intended to guide future risk assessments have been removed from DPR’s website, making it impossible for the public to even know that those lists exist.

This is part of a very unfortunate recent reversal of DPR’s longstanding record of data transparency, with vast swaths of historical information now removed and new information no longer posted. Many DPR webpages state that documents are available upon submittal of a public records request, but we do not consider that a substitute for transparency in a public agency such as DPR.

We ask that all Risk Assessments and prioritization lists be restored to the website as an urgent matter, and an index be provided of all documents, agendas, datasets, reports and other information available to the public on request.

We note that even this factsheet on which we are commenting is not posted on DPR’s website. It is attached as Appendix 1.

Another aspect of transparency is timeliness: we note again that the latest PUR dataset publicly available online is for 2018. This is again a troubling backslide for DPR. For example,

- 2015 and 2016 PUR data were publicly released in April 2017 and April 2018 respectively (16 months after the end of the PUR year)
- 2017 PUR was released in June 2019, after 18 months
- 2018 PUR was posted online between Christmas and New Years in 2020 - a lag of 24 months.
- 2019 and 2020 PUR data have still not been released publicly, more than 30 months and 18 months respectively after the end of the data year.

While DPR’s factsheet claims reductions in use levels for 10 of the pesticides in 2020 compared with 2000, this is not currently verifiable without public access to the data. The available data through 2018 shows that paraquat dichloride, for example, has not in fact declined, with 1.3 million pounds used in 2018, more than double the amount used in 2013.

In addition, all PUR summary reports for years before 2017 have been permanently removed from DPR's website, with only 2017 and 2018 publicly available. We ask that the department prioritize restoration of all PUR summaries to its website and expedite publication of PUR for 2019 and 2020.

Furthermore, DPR failed to include percentage changes or an eye-catching graphic for pesticides whose use increased. While the factsheet states that metam sodium use has declined, there has in fact been a sharp increase in recent years, with the 2020 amount the highest since 2013, based on preliminary data for 2019 and 2020 (not yet publicly posted). Also not mentioned is that, while use of metam sodium decreased from the level in 2000, use of metam potassium significantly increased. Both metam sodium and metam potassium break down to MITC. Combined use of metam sodium and metam potassium has stayed remarkably constant for the past decade, at around 13 million pounds per year. MITC has been detected at all of DPR's air monitoring sites, and in 2017, there was an exceedance at Arvin of the seasonal screening level. Although the permit conditions for MITC-generating fumigants recommend a maximum fumigation area of 80 acres, the Arvin exceedance resulted from a 118 acre fumigation.

Cherry picking only the data that puts DPR in the best possible light does not instill confidence that DPR is looking fairly at the department's performance and evaluating what changes are needed.

### **Regulatory Action**

The factsheet states that DPR "has adopted or is in the process of developing regulations" for propanil. However, neither DPR's list of proposed and recently adopted regulations<sup>4</sup> nor its 2022 rulemaking calendar<sup>5</sup> show proposed regulation for propanil.

We ask that you clarify the status of rulemaking for this pesticide, and make the appropriate corrections to the online record, the factsheet, or both.

### **International Bans**

In contrast to California's inaction, 12 of the 15 pesticides identified in the study are already widely banned internationally, even while use for some of these pesticides continues at very high levels in California. In failing to protect Californians from these cancer-causing pesticides, our state lags far behind other agricultural economies. This is unacceptable.

According to the list of bans published by PAN International<sup>6</sup>, last updated in May 2022, the number of countries that have banned each pesticide is as follows:

- Bromacil banned in 33 countries
- Chlorothalonil: 34
- Dimethoate: 33

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<sup>4</sup> <https://www.cdpr.ca.gov/docs/legbills/rulepkgs.htm> accessed 7/14/22

<sup>5</sup> [https://www.cdpr.ca.gov/docs/legbills/rule\\_calendar\\_2022.pdf](https://www.cdpr.ca.gov/docs/legbills/rule_calendar_2022.pdf) accessed 7/14/22

<sup>6</sup> <https://pan-international.org/pan-international-consolidated-list-of-banned-pesticides/> accessed 7/14/22

- Diuron: 31
- Linuron: 34
- Paraquat dichloride: 58
- Phosmet: 28
- Propanil: 31
- Propiconazole: 29
- Thiophanate-methyl: 29
- Trifluralin: 29
- Triforine: 31

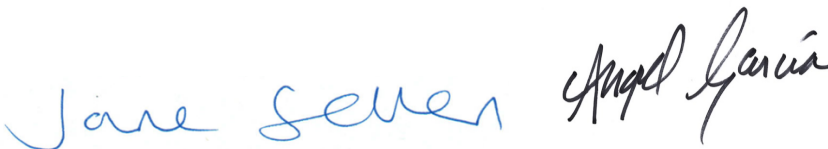
### **DPR's Future Actions**

The factsheet states that for its future actions the department will “*reference* the studies” and “*support* research to directly measure pesticide exposure.” These are scarcely action verbs, and are plainly inadequate to the scale of the problem.

We ask DPR to commit to:

1. Conducting Risk Assessments for the pesticides that have not yet been evaluated and are still widely used in California.
2. Developing mitigations to address unacceptable risks identified in all completed risk assessments
3. Providing guidelines and a timetable within 6 months for the completion of risk assessments and mitigations to the Pesticide Registration and Evaluation Committee
4. Providing a report of all actions taken to mitigate risk of exposure in response to detections and especially exceedances measured in the last five years in DPR's groundwater and air monitoring programs
5. Expediting the assessment of all 15 pesticides as potential carcinogens (only 4 are currently classified as carcinogens)
6. Expediting the classification of all of the pesticides still registered for use in California as Restricted Materials, and developing permit conditions to protect against prenatal exposure
7. Restoring all missing data, reports, agendas and other documentation to DPR's public website, including risk assessments and prioritization lists, along with an index of documents available on request
8. Immediately releasing 2019 and 2020 PUR, and restoring all PUR reports from 1990 to 2016 to DPR's public website
9. Providing advance notification for all use of these 15 pesticides.

Sincerely,

The image shows two handwritten signatures in blue ink. The signature on the left is 'Jane Sellen' and the signature on the right is 'Angel Garcia'. Both are written in a cursive, flowing style.

Jane Sellen and Angel Garcia, Co-Directors, Californians for Pesticide Reform

A handwritten signature in black ink that reads "Anne Katten". The signature is fluid and cursive, with the first name "Anne" and the last name "Katten" clearly distinguishable.

Anne Katten, Pesticide and Work Safety Project Director, California Rural Legal Assistance Foundation

Cc: Karen Morrison, DPR, [karen.morrison@cdpr.ca.gov](mailto:karen.morrison@cdpr.ca.gov)  
Jared Blumenfeld, CalEPA, [jared.blumenfeld@calepa.ca.gov](mailto:jared.blumenfeld@calepa.ca.gov)

Appendix 1: DPR's Factsheet "Review and Actions Taken to Regulate Pesticides Named in Recent UCLA Studies" (March 2022)



# Review and Actions Taken to Regulate Pesticides Named in Recent UCLA Studies

## The Role of the Department of Pesticide Regulation in Evaluating Adverse Pesticide Effects on Human Health

The Department of Pesticide Regulation (DPR) plays a critical role in evaluating pesticides based on the best available science and data and uses this evaluation to mitigate adverse impacts on human health and the environment, in alignment with the Department’s mission, statutory obligations and priority of transitioning to safer, more sustainable pest management.

As part of the department’s process to evaluate pesticides to inform registration decisions, and to continuously evaluate pesticide products post-registration, DPR systematically reviews scientific studies, worker health and safety data, reported pesticide illness and injuries and additional information. The department’s continuous evaluation post-registration can include formally reevaluating pesticides, conducting exposure studies, conducting human health risk assessments, monitoring the air and water for pesticides, and investigating information that indicates a pesticide may have caused an adverse effect on human health or the environment.

DPR’s evaluation of pesticide risks is vital to advancing its mission to protect human health and the environment.

## Recent Epidemiological Studies Raise Concerns

The 2020 epidemiological study by Dr. Andrew Park et al., “Prenatal pesticide exposure and childhood leukemia - A California statewide case-control study” (Park Study) and a 2021 epidemiological study by Dr. Christina Lombardi et al., “Residential proximity to pesticide application as a risk factor for childhood central nervous system tumors” (Lombardi Study) both present a concerning hypothesis: childhood cancer risk is associated with a mother’s proximity to agricultural fields where pesticides are applied.

The Park et al. (2020) and Lombardi et al. (2021) studies were well conducted and used data from two statewide surveillance systems (California’s Cancer Registry and the DPR Pesticide Use Reporting database) to investigate associations between the two sets of data. As part of the process of conducting these epidemiological studies, data were reviewed from 23- and 25-year periods between 1988-2011 and 1988-2013 respectively.

Evaluation of the studies’ hypotheses in the current regulatory context requires consideration of the current use of pesticides cited in the studies, and regulatory limits placed on the use of those pesticides and monitoring conducted by DPR in the last decade since the conclusion of the data gathering used in the study to address adverse impacts to human health.

## How Epidemiological Studies Inform DPR Actions, Including Mitigation and Regulatory Actions to Protect Human Health and the Environment

Epidemiological studies, including the Park et al. (2020) and Lombardi et al. (2021) studies, help provide a foundation for mitigation efforts when combined with studies that link risk factors directly to pesticide use. Both the Park et al. (2020) and Lombardi et al. (2021) studies are an important part of all current and future systematic evaluations and reevaluations of pesticide products and are used to assess the potential impact of the use of these pesticides. In toxicology reviews, epidemiological studies are not considered as a sole basis for action, but are critical to strengthening the weight of evidence that can lead to restrictions on pesticide use, additional mitigation measures or other department regulatory changes.

DPR is interested in working with researchers to study data on pesticide exposure to inform any necessary mitigation measures, to build upon the actions DPR has already taken on the pesticides named in both the Park et al. (2020) and Lombardi et al. (2021) studies to address human health and environmental risks.

## Actions Taken by DPR on Pesticides Named in Park et al. (2020) and Lombardi et al. (2021) Studies

Of the 15 pesticides named in the two studies, DPR and the United States Environmental Protection Agency (U.S. EPA) have conducted a review or evaluation of 14 pesticides. Triforine, the only pesticide not under current evaluation, is not registered for use or sale in California.

### DPR Evaluation, Reevaluation, or Risk Assessment Conducted or in Progress

- Bromacil – completed in 2010 and updated in 2021
- Chlorothalonil – completed in 2005 and updated in 2018
- Diuron – completed in 2012
- Linuron – completed in 2012
- Metam-sodium – completed in 2004, updated in 2016 and 2017
- Phosmet – completed in 1988
- Propanil – completed in 2019
- Thiophanate-methyl – in progress

### U.S. EPA Evaluation Conducted or in Progress

- Chlorothalonil – in progress
- Diuron – in progress
- Kresoxim-methyl – completed in 2018
- Linuron – in progress
- Paraquat Dichloride – completed in 2021
- Phosmet – in progress
- Propiconazole – in progress
- Thiophanate-Methyl – completed in 2018
- (2,6-Dinitroanilines) Oryzalin – in progress
- (2,6-Dinitroanilines) Trifluralin – completed in 2018

Based on the results from the evaluations completed to date, DPR has taken the following actions to limit and monitor the use of these pesticides in the state of California:

### Designated as a California Restricted Material

*What this means: Requires submission of a notice of intent and an approved permit issued by the local County Agricultural Commissioner prior to application. Commissioners may require permit conditions and restrictions on use such as buffer zones. Restricted material pesticides may be applied only by a licensed pesticide applicator.*

- Bromacil
- Diuron
- Metam-sodium – updated permit conditions by DPR within last 5 years
- Paraquat dichloride – updated federal requirements within last 5 years
- Propanil

### Monitored through DPR Groundwater Protection List

*What this means: These pesticides are subject to groundwater sampling and the department will take further action if groundwater detections are associated with legal agricultural use.*

- Bromacil
- Chlorothalonil
- Dimethoate
- Diuron
- Linuron
- Propanil
- Propiconazole
- Thiophanate-Methyl
- (2,6-Dinitroanilines) Oryzalin



## Monitored through DPR Air Monitoring Program

*What this means: These pesticides are subject to ambient air sampling and the department will take further action if any pesticide monitored, or any of its degradates, is detected in the air at or above a specified level.*

- Metam-Sodium

## Pesticide in Current/Active Mitigation

*What this means: DPR has adopted or is in the process of developing regulations for use requirements in addition to those on a pesticide label to mitigate adverse effects to human health or the environment. Mitigation could mean adding conditions for use, changing the label, or cancelling the product.*

- Propanil

## California Use Decreased for Most Pesticides Named in Study

DPR's Pesticide Use Reporting Data indicates the use of 10 out of the 15 pesticides named in the studies decreased between 15 and 100 percent between 2000 and 2020. All 10 of those pesticides have been or are currently in an evaluation process with DPR or U.S. EPA, leading to a combination of mitigation requirements, state regulations and associated decreased use. The five pesticides whose use did not decrease during that period - Kresoxim-methyl (which decreased in use between 2010-2020 following the completion of the studies' data collection period), Propanil, Chlorothalonil, Thiophanate-Methyl and Propiconazole have all been evaluated or are currently in evaluation by both DPR and the U.S. EPA, as noted above.

### California Use Decreased 70 to 100 Percent Between 2000 and 2020

- Bromacil
- Diuron
- Metam-Sodium
- Phosmet
- Triforine
- (2,6-Dinitroanilines) Oryzalin
- (2,6-Dinitroanilines) Trifluralin

### California Use Decreased 50 to 70 Percent Between 2000 and 2020

- Dimethoate

### California Use Decreased 15 to 25 Percent Between 2000 and 2020

- Paraquat Dichloride
- (Urea) Linuron

## DPR's Future Actions to Evaluate Adverse Impact of Pesticides on Human Health

The department's next steps for the Park et al. (2020) and Lombardi et al. (2021) studies include the following:

- Reference the studies to strengthen the weight of evidence in current and future evaluations of these pesticides.
- Support research to directly measure pesticide exposure related to the Park et al. (2020) and Lombardi et al. (2021) studies to inform future actions.

More information about DPR's role and mission can be found on its website: [www.cdpr.ca.gov](http://www.cdpr.ca.gov).