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MEMORANDUM

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SUBJECT: DEPARTMENT ACTIVITIES IN RESPONSE TO KEY RECOMMENDATIONS OF THE CHLORPYRIFOS ALTERNATIVES WORK GROUP

On May 8, 2019, the Department of Pesticide Regulation (DPR) announced the [initiation of proceedings to cancel the registration of chlorpyrifos](#) which resulted in an agreement to prohibit nearly all sales and use of chlorpyrifos in the state by the end of 2020. Shortly after, DPR and the California Department of Food and Agriculture (CDFA) established a [Chlorpyrifos Alternatives Work Group](#). The Work Group was tasked to identify immediately available alternatives to chlorpyrifos as well as explore longer-term pest management alternatives to pest management. DPR held [three facilitated roundtable discussions](#) to obtain [public feedback](#) that the Work Group used to formulate their recommendations. On July 16, 2020, the Work Group released [“Towards Safer and More Sustainable Alternatives to Chlorpyrifos: An Action Plan for California”](#), a report which included a five-year action plan and five key recommendations. The five key recommendations are: outreach to growers, building institutional capacity, regulatory improvements, research priorities, and a roadmap for future work.

- 1. **OUTREACH TO GROWERS:** *The recommendation centers around outreach to ensure that interested parties (growers, registrants, general public, etc.) are current on information related to the chlorpyrifos prohibition and how it may impact them. The recommendation includes a specific suggestion to update the information in the [University of California’s online Pest Management Guidelines](#) and to promote it as a resource.*

DPR created a [dedicated webpage with important information related to the prohibition on chlorpyrifos](#) and utilized social media, when appropriate, to provide related notices. The Work Group identified “relevant details” for outreach materials related to the prohibition on chlorpyrifos. These details, and links to online resources that were made available, are listed below.

Relevant Detail Related to the Prohibition	Online Resource
Technical details	<ul style="list-style-type: none">Chlorpyrifos: Human Health Risk Assessment and Mitigation Documents and Activities

	<ul style="list-style-type: none"> • Press Release: “California Acts to Prohibit Chlorpyrifos Pesticide”, May 08, 2019
<p>Relevant dates for all components of implementation</p>	<ul style="list-style-type: none"> • Press Release: “California Acts to Prohibit Chlorpyrifos Pesticide”, May 08, 2019 • Press Release: “Agreement Reached to End Sale of Chlorpyrifos in California by February 2020”, October 9, 2019 • DPR Agreement with Registrants • Chlorpyrifos Cancellation Notices to Registrant
<p>Information about options to work with local dealerships to ensure that unused stocks of chlorpyrifos are collected prior to the deadline on sale and use</p>	<ul style="list-style-type: none"> • Notice of Use and Sale Conditions For Chlorpyrifos Products, October 9, 2019
<p>Resources for identifying readily available alternatives</p>	<ul style="list-style-type: none"> • UC-ANR Pest Management Guidelines for Agricultural Pests
<p>Brief explanation that medium and longer term solutions are in development</p>	<ul style="list-style-type: none"> • Report: Towards Safer and More Sustainable Alternatives to Chlorpyrifos: An Action Plan for California, May 2020 • Press Release: “New Report Lays Groundwork for Safer, More-sustainable Alternatives to Banned Pesticide Chlorpyrifos”, July 16, 2020 • Press Release: “DPR Awards \$1.34 Million for Alternatives to Chlorpyrifos Research Grants”, August 24, 2020

2. ***BUILDING INSTITUTIONAL CAPACITY:*** *The Work Group identified structural needs in the UC Cooperative Extension and the UC Statewide Integrated Pest Management Program, the two main engines within the University of California (UC) Division of Agricultural and Natural Resources (ANR) that drive institutional capacity around agricultural production and broader food systems in California. The Work Group recommended reinvestment in both these institutions “to leverage the value of their existing expertise and rebuild their institutional resources so they can play a strong leadership role in developing critical public goods, strong agricultural economies, resilient food systems, and healthy communities.” Specific recommendations include a) rebuilding UC Cooperative Extension System with an expanded stable budget, b) revitalizing the UC Statewide Integrated Pest Management Program and c) preventing new pests from coming into California and moving within the state.*

As a part of the January 2021 Governor’s Budget, DPR and CDFA proposed \$8 million in annual funding to UC ANR and the California State Universities to expand research, education, and extension capacity.

3. ***REGULATORY IMPROVEMENTS:*** *The Work Group acknowledged DPR’s core mission to protect human health and the environment, and recommended improving the efficiency of its regulatory process to achieve this goal. The Work Group had three main recommendations: a) adjust DPR staffing and priorities to reflect the high-priority need to identify alternatives to chlorpyrifos, b) expand the range of topics offered for pest control adviser certification and continuing education, and c) report the changes in pesticide uses after most use of chlorpyrifos has ceased, and share this information with the public.*

a) Adjust DPR staffing and priorities to reflect the high-priority need to identify alternatives to chlorpyrifos

DPR continuously evaluates its registration procedure to identify areas that can be modified to streamline the registration process without compromising scientific rigor, public health, or environmental health.

Registration Review

The Work Group recommended prioritizing the review of alternative active ingredients if all required data have been submitted. Currently, applicants have the option of requesting an expedited evaluation by submitting a letter to the Pesticide Registration Branch (PRB) Chief.

The written request must include a documented justification, such as proof that no effective alternative pest controls exist.

DPR continues to receive applications for the registration of insecticidal products containing both conventional and biopesticide active ingredients (AI). Some of these products could potentially be an alternative to chlorpyrifos. However, during the registration process, registrants do not specify that a proposed product and active ingredient(s) is specifically intended as an alternative to another pesticide.

The table below summarizes the registration status of new insecticidal products as of December 2020. Products classified as “other” include those that have: a) completed scientific review but have yet to complete the Public Report needed prior to posting in the weekly [Notices of Proposed and Final Decisions](#), b) been approved for public comment and will be posted in the Notices of Proposed and Final Decisions, and c) been posted in the Notices of Proposed and Final Decisions but are awaiting public comment.

Registration Stage	Conventional AI		Biopesticide AI		TOTAL PRODUCTS
	No. of Products	No. of AIs	No. of Products	No. of AIs	
Registered	5	3	5	4	10
Scientific Evaluation/Review	4	3	1	1	5
Other	2	2	1	1	3
TOTAL	11		7		18

Exemptions - Section 24(c), Section 18 and Section 2(ee)

The Work Group identified DPR’s [Section 24\(c\) special local need \(SLN\) registration](#), [Section 18](#) emergency exemption, and Section 2(ee) special use exemption as short-term options to address the need for immediate alternatives for some crop/pest combinations.

An SLN allows the registration of a new product or an additional use of a federally registered pesticide product to address an existing or imminent pest situation. The pest situation must be a special local need within the state that cannot be mitigated by a currently registered product. A registrant or someone other than the registrant (such as a grower, grower association or UC Cooperative Extension personnel) may apply for an SLN registration.

A Section 18 emergency exemption allows DPR to grant the time limited use of a pesticide product that is not registered, if an emergency condition, as defined in 40 CFR Part 166, exists. UC Extension personnel, County Agricultural Commissioners (CACs), grower groups and others can apply for a Section 18 but registrants cannot.

As of April 30, 2020, DPR has approved five applications for a Section 18 exemption and no applications for SLN registrations as chlorpyrifos alternatives. As of December 2020, DPR is currently evaluating four other Section 18 exemption submissions.

The Work Group also cited FIFRA Section 2(ee) as an option. Section 2(ee) exemptions are reviewed by the United States Environmental Protection Agency (U.S. EPA). DPR does not review or track 2(ee) exemptions.

Pesticide Registration Data Management System (PRDMS)

The Work Group recommended the completion and implementation of the PRDMS, which would allow for online data submission and data management to facilitate the registration process.

In July 2020, DPR submitted a Special Project Report (SPR) to the California Department of Technology (CDT) to re-baseline the project cost and schedule, and change the project name to the California Pesticide Electronic Submission Tracking. Based on feedback from CDT, DPR submitted an update to the SPR in September 2020, and released a Budget Change Proposal as a part of the January 2021 Governor's Budget. DPR expects to initiate the procurement process for a new developer in first quarter of 2021. DPR is committed to the development of an electronic registration system to improve process efficiency.

Data Requirements

The Work Group recommended that DPR update requirements, including those related to statistical data, for product efficacy research trials. In accordance with Title 3 of the California Code of Regulation sections 6159, 6170, 6186, and 6192, each application to register a new product or to amend an existing product label must be accompanied by supporting data, including efficacy data obtained under California or California-like conditions. DPR has released two notices with revised guidance: [Changes To California-Like Conditions For Terrestrial Field Dissipation Studies](#) (California Notice 2019-05, May 28, 2019) and [Spray Adjuvant Chemical Formulation Identity Disclosure](#) (California Notice 2020-13, October 23, 2020).

Additional Recommendations to Prevent Backlogs of Future Registration Reviews

Staffing to Alleviate Bottlenecks

In mid-2018, DPR received six (6) additional positions to expand and ensure the timely review of products by PRB's ecotoxicology station. Since that time, all of the positions were filled and as staff complete their training, DPR continues to see reductions in the ecotoxicology station backlog.

DPR improved its public report documentation in spring of 2019 as a result of a lawsuit. PRB informed stakeholders that the changes could add as much as 4-6 months to registration processing times. Over the last year, the time period has been as much as 2.5 to 3 months, but has recently decreased to 30 days as PRB worked through submissions that were already in house prior to the May 2019 implementation date. Finally, DPR's PRB was reorganized to increase efficiency and productivity. The new Pesticide Evaluation Branch is now comprised of the 1) Chemistry, 2) Plant Physiology, Pest and Disease, 3) Microbiology, and 4) Ecotoxicology Programs.

Over the last two years, DPR has also worked to reduce review times in its scientific evaluation stations. This has included increasing the number of products processed each month in the ecotoxicology evaluation station by 150%, and decreasing the processing times in the chemistry evaluation station for existing active ingredients from weeks to days.

Concurrent Reviews

DPR currently accepts several types of applications for California registration concurrently with submission to U.S. EPA for federal registration. These applications include: (1) new products containing new active ingredients, (2) new products and amendments to human health antimicrobials, and (3) new products and amendments to products that will be used in a public health program. DPR continues to assess concurrent or expedited reviews for products identified as alternatives to chlorpyrifos.

Modified Registration Process for Lower-risk Pesticide Products

A goal in [DPR's 2018 Strategic Plan](#) is to advance reduced-risk pest management systems by advancing the research, development and adoption of effective pest management systems that reduce risks to people and the environment. This goal can be achieved by encouraging and supporting research and development of reduced-risk pest management practices and technologies. DPR has prioritized the registration of lower-risk pesticide products to the extent possible.

DPR incorporates, by regulation, U.S. EPA's pesticide data requirements as its own. Under federal regulations, the required data requirements for conventional pesticides are more substantive than those of biopesticides. As a result, biopesticides take less time to evaluate than conventional pesticides. DPR conducts a thorough evaluation of all product registration applications, including biopesticides. This ensures that there are no human health or environmental safety, or efficacy concerns when used under California conditions.

b) Expand the range of topics offered for pest control adviser certification and continuing education.

The Work Group recommended that DPR expand the range of topics offered for [Pest Control Adviser \(PCA\) licensing and certification](#) to include more focus on less toxic alternatives.

DPR has [specific knowledge expectations](#) for the examination of new applicants for a PCA license. Aside from various pest control categories (Insects, Mites and Other Invertebrates, Plant Pathology, Nematodes, Vertebrate Pests, Weed Control, Defoliation and Other Harvest-Aid Practices, and Plant Growth Regulators), applicants are required to know the laws and regulations pertaining to pesticide use, including the principles of integrated pest management (IPM).

Specific [IPM topics that a PCA must know](#) include:

1. Ecological principles as they relate to pest management, the IPM concept,
2. An understanding of pests,
3. Management methods for IPM programs including:
 - a. Host resistance or tolerance,
 - b. Biological control,
 - c. Cultural pest control, mechanical and physical methods of control,
 - d. Pesticide use in IPM programs (including insect growth regulators and when to apply insecticides to avoid hazards to bees),
 - e. Resistance management, and
 - f. Other related pest management/production systems such as sustainable agriculture and organic farming.
4. Monitoring and decision making guidelines,
5. Setting up monitoring programs and field trials,
6. Health and environmental concerns associated with pesticide use including:
 - a. Environmental fate of pesticides,
 - b. Breakdown of pesticides in the environment,

- c. General principles of toxicology including evaluating the potential risk associated with pesticides,
 - d. Mitigating the risks of hazards associated with pesticide use,
 - e. Pesticide exposures and illnesses, and
 - f. The effect of pesticides on non-target organisms
7. Setting up an IPM program.

DPR also requires [continuing education \(CE\) hours for PCA license renewal](#) including four hours in “Laws and Regulations” and an additional 36 hours in “Other pesticides and pest management topics”. These CE hours need to be completed every two years to retain a license.

DPR will continue to work with course sponsors to evaluate, refine, and approve comprehensive IPM CE courses. DPR is dedicated to promoting and expanding the use of IPM. DPR recognizes the importance of managing pests using IPM principles, and CE for PCAs and other license and certificate holders that focuses on these principles will best ensure pesticide use is reduced, or eliminated when appropriate.

c) Report the changes in pesticide uses after the prohibition on chlorpyrifos is complete, and share this information with the public.

California requires full reporting of agricultural pesticide use. Under the program, all agricultural pesticide use must be reported monthly to CACs who, in turn, report the data to DPR. DPR releases an annual report describing pesticide use and trends in pesticide use. The Work Group specifically recommended that upon the release of 2021 PUR data, DPR summarize pesticide use data on crops where chlorpyrifos had been used in the years prior to the recommended [permit conditions](#) being issued. This summary will identify significant changes in pesticide use, include toxicity information about exposure rates and combinations, as well as other information that can illustrate changes that have occurred since the prohibition on chlorpyrifos. DPR can decide on the best format in which to convey this information to the public to ensure that the information is easily understood. The Work Group also recommended that the information also be made available in multiple languages.

On September 29, 2020, the Governor approved Senate Bill 86. The bill requires DPR to prepare and submit quarterly reports detailing the changes in the use of granular chlorpyrifos, the only formulation of chlorpyrifos still allowed. The reports will document changes in granular chlorpyrifos use, possible reasons for any fluctuation in use, a description of exposure monitoring, and information related to actual exposure during the previous quarter. This report will be separate from the PUR Annual Report. The first quarterly report is due by the end of the first quarter of 2021 and will include the information requested by the Work Group.

4. **RESEARCH PRIORITIES:** *The Work Group identified a critical lack of both applied and basic research into new pest management approaches and chlorpyrifos alternatives as a deterrent in the state's ability to manage pests, particularly in crops where chlorpyrifos use a critical.*

The Work Group identified four high priority areas for research: a) invest in research to find immediate-term, crop-specific IPM solutions, b) expand research on basic biology and ecology of pests and beneficial insects, c) invest long-term in research to support IPM and, d) investigate the impact of changes in patterns of pesticide use and human and environmental exposure. The Work Group only identified DPR to act on the first high priority research area.

DPR has long supported, and will continue its efforts to promote, the practice of IPM in California. From 2016 – 2018, DPR in coordination with UC IPM sponsored the [Pest, Pesticides, and IPM Project](#) which was designed to increase the understanding of the complexities of pest management by the general public and to encourage more adoption of IPM by practitioners in the field. The project resulted in a [Roadmap for Integrated Pest Management](#) that includes ten recommendations to build better IPM for all Californians. These recommendations were developed through discussions with seasoned thought leaders, researchers, extension personnel, IPM practitioners, people that use pesticides, people impacted by pesticide use, worker representatives, non-English speakers, retailers and regulators from the urban and rural areas of California.

DPR's [IPM Achievement Awards](#) recognizes organizations that are leaders not only in the use of reduced-risk pest management practices, but also in sharing their successful strategies with others. Additionally, DPR's [Pest Management Research Grants](#) are geared towards funding projects that reduce the use of high-risk pesticides while the [Alliance Grants](#) demonstrate and promote the adoption of these systems.

In 2019, the Pest Management Research Grants Program received \$2.1 million to seek and develop alternatives to chlorpyrifos. This funding has enabled six new projects assessing impacted systems such as evaluating the effects of chlorpyrifos alternatives on honeybees, substitute chemistries and techniques for cultivation of sugarbeet, citrus, grape, and cotton; ant-sensing technology; hydrogel development and testing; and irrigation strategies to incorporate into IPM programs. The Department continues to fund Research Grants and Alliance Grants, including projects that may alleviate effects on growers from the prohibition on chlorpyrifos usage.

The January 2021 Governor's Budget includes an additional \$2.5 million for DPR's Research and Alliance Grants, and an additional \$3.75 million for CDFA's Biologically Integrated Farming Systems, Proactive IPM, and IR-4 research grants.

[Appendix 8 of the Work Group's five-year action plan](#) includes a list of immediate-term research priorities for identifying alternatives to chlorpyrifos. DPR can use the list to guide annual research grant solicitations.

5. **ROADMAP FOR FUTURE WORK:** *The Work Group recognized that more work remains for DPR and its stakeholders to develop a shared vision and plan for pest management that is less dependent on individual active ingredients. They suggested a series of follow-on activities that would build on their efforts towards a lasting, meaningful impact at the intersection of agriculture, community health, and the environment. These activities include:*
- a) deepen multi-sector collaboration on the future of pest management,*
 - b) find a shared language around agriculture, environmental protection, community health, and consumers,*
 - c) explore monitoring and enforcement of existing regulations, and*
 - d) invest in systems-based research to explore alternative approaches to agricultural production and effective pest management.*

Sustainable Pest Management Work Group (SPM)

In March 2021, DPR will launch a Sustainable Pest Management Work Group (SPM). The SPM Work Group will be a small, professionally facilitated group of approximately 25 members who will build on the discussions of Chlorpyrifos Alternatives Work Group. They will be tasked with the development of a prioritized roadmap to improve, promote, and encourage the acceptance and adoption of IPM, and guide the implementation of short and long-term strategies for safe, sustainable, system-wide pest management in California ("Sustainable Pest Management").

The SPM Work Group will focus on deepening and extending the recommendations made by the Chlorpyrifos Alternatives Work Group, specifically on future work needed to create a roadmap to Sustainable Pest Management in California. The SPM Work Group furthers the DPR's strategic plan goal to advance the development and adoption of Sustainable Pest Management systems and presents an opportunity for California to implement a new framework to identify, evaluate, and implement alternative pest management practices.

DPR will work closely with the facilitator to establish a selection criteria and process to ensure the diversity of the SPM Work Group membership. DPR will continue to provide the SPM Work Group with the information and data they may need to provide more context for the group's work. DPR envisions that the SPM Work Group will exist for at least a year to give them ample time to accomplish their task.

Continued Conversations with Stakeholders

DPR recognizes the importance of acknowledging and addressing stakeholder concerns about pesticides, and has increased its activity in this area over the last several years.

In 2014, DPR partnered with UC Davis Extension to conduct *Neighbors on Edge* workshops in Sacramento, Tulare, Red Bluff and Ventura. These workshops were focused on resolving agricultural land and urban development conflicts. Participants included county agricultural commissioner staff, land use planners, county Board of Supervisors, environmental health directors and others.

In 2015, DPR held several workshops across the state to address concerns about the agricultural use of pesticides near schools. Information gathered during these workshops were used to develop regulations on pesticide use near schools.

In 2016, DPR held two workshops in the Salinas and Fresno area to gather ideas from various stakeholders on how best to notify residents who live close to or around agricultural fields when a fumigant application occurs near them. Feedback obtained from these workshops were used to develop notification regulations.

In 2018, DPR sought public comments on its draft Tribal Consultation Policy. In 2019, DPR's [Tribal Consultation Policy](#) was approved and shared with CACs. The policy is intended to facilitate communication and coordination between DPR, CACs and California Native American Tribes who are DPR's enforcement partners in tribal lands.

More recently, DPR's Air Program has collaborated with the California Air Resources Board and various air districts on the Community Air Protection Program (CAPP) initiative, under AB 617. DPR staff assist with the CAPP communities of Oakland, Imperial, Shafter, and Eastern Coachella Valley by providing each community with information on pesticide use in their area, and technical expertise on air monitoring technologies. DPR also participates in CAPP community steering committee meetings in an advisory capacity as each community determines their own emissions reduction plan.

DPR will continue to take on opportunities that build collaborative relationships with local governments, communities and media to promote cooperation and understanding, and as a part of the January 2021 Governor's Budget, DPR proposed adding permanent positions to further this work.

Reaching California's Diverse Population

DPR takes measures to ensure that California's diverse population has access to information related to pesticide sales and use.

DPR maintains and regularly updates [fact sheets and publications](#) for both professionals and the general public on a variety of pesticide related topics. In addition to English, these fact sheets and publications are also available in Spanish, Punjabi and/or Hmong.

Throughout the year, and all over the state, DPR conducts community events and participates in health fairs to share information and outreach materials on public and worker safety, laws and regulations.

In May 2019, DPR, in cooperation with the Monterey County Agricultural Commissioner's Office, conducted a two-day Environmental Justice workshop in Salinas. The workshop tackled a subjects ranging from DPR's various regulatory functions to how the CACs work with the state to enforce pesticide regulations.

Also in 2019, DPR, aware of the growing Hmong farming communities, produced and released a [nine-part video series](#) in Hmong, with English subtitles, on a variety of important pesticide related topics. The production of these videos was a collaborative effort between DPR, the UC Cooperative Extension and CSU Fresno.

In 2020, DPR's Worker Health and Safety Program, through a grant from US EPA, began broadcasting Spanish language public service announcements (PSA). These PSAs were aired over three months in over 19 counties through numerous radio stations and one TV station. DPR plans to continue with broadcasting more PSAs as they are an effective means of reaching farming communities.

DPR Advisory Committees

Currently, DPR has three advisory committees – the Pest Management Advisory Committee, Pesticide Registration Evaluation Committee, and Agricultural Pest Control Advisory Committee. DPR will explore how it can utilize any or all of these advisory groups to promote reduced-risk pest management, build on the recommendations of both the Chlorpyrifos Work Group and the Sustainable Pest Management Work Group, and continue the dialogue between DPR and its stakeholders.

Monitoring and Enforcement of Pesticide Laws and Regulations

The Work Group recommended that DPR explore improved monitoring and enforcement of existing regulations. DPR's current administration has made pesticide enforcement a priority. DPR has and will continue to work closely with the various CACs to enforce pesticide laws and regulations. DPR will also work closely with community stakeholders to make sure that enforcement is applied equitably across California.

DPR's Enforcement Branch, through its product compliance unit, will continue to visit dealerships to monitor the sale and use of unregistered products. They will monitor online sales, which could potentially allow prohibited chlorpyrifos products to reenter the channels of trade in California. Enforcement Branch liaisons will continue to conduct oversight inspections with CACs staff to ensure compliance with the laws and regulations of California. These oversight inspections include audits of dealerships. The January 2021 Governor's Budget proposes adding 18 positions to DPR's Enforcement Branch to further support this work.