February 15, 2022

Jennifer Teerlink
Pesticide Registration Branch
California Department of Pesticide Regulation
1001 I Street
Sacramento, CA 95814

Re: Comments in Response to California Department of Pesticide Regulation's Request for Comments on Pesticide-Treated Seeds Public Workshop

Dear Ms. Teerlink:

We write to submit the following comments on behalf of the Natural Resources Defense Council (NRDC), California Institute for Biodiversity, California Native Plant Society, Californians for Pesticide Reform, Center for Biological Diversity, Center for Food Safety, Environment California, Friends of the Earth, Pesticide Action Network, Pollinator Stewardship Council, the Xerces Society for Invertebrate Conservation, and our hundreds of thousands of California members (Commenters) in response to the California Department of Pesticide Regulation's (DPR) request for public comment on the information presented at its November 15, 2021, public workshop regarding pesticide-treated seeds (the "November Workshop").

We commend DPR for its earnest examination of the available information on pesticide-treated seed use in California, as well as its honest assessment and presentation of that information at the November Workshop. As outlined at that workshop, the true extent of the use of pesticide seed treatments in California is almost entirely unknown, although we now know it includes seeds treated with pesticide products not approved for use in California. Further, for many active ingredients, the use on seeds may far outstrip the uses regulated and tracked through DPR's Pesticide Use Reporting (PUR) system.

Many of the Commenters petitioned DPR—in an initial September 23, 2020, petition and a December 22, 2020, request for reconsideration (collectively, the "Petition")—to regulate and track the use of seeds treated with systemic pesticides as required by the California Food and Agriculture Code (FAC). The information presented at the November Workshop only further underscores the responsibility and the need for DPR to take the actions requested in the Petition. However, to date, DPR has denied the Petition and—despite apparent recognition of the intended pesticidal effect of certain pesticide-treated seeds beyond protection of the seeds themselves—has made no commitment to register, regulate, or track the use of any pesticide-treated seed anywhere in California.

DPR must do so now, at a minimum, for all seeds treated with systemic pesticides. These seeds clearly constitute "pesticides" under the FAC, and DPR must take the necessary regulatory steps to ensure their use does not harm California's environment and its people. Whether that regulatory action takes the form of traditional registration and review as with other pesticide products or an alternative regulatory

program, DPR must provide for tracking of such seeds in the PUR system as well as any mitigation necessary to control their environmentally harmful effects—such as the many known destructive effects of neonicotinoid-treated seed use.

Commenters offer the following specific comments:

I. DPR Has a Duty to Regulate Seeds Treated with Systemic Pesticides

As outlined in the Petition, DPR has a duty to regulate, at a minimum, all seeds treated with neonicotinoid insecticides (neonics) and other systemic pesticides. We attach that Petition to these comments and briefly summarize its key argument here.

The FAC charges DPR with controlling the registration, sale, and use of pesticides in California in order to, among other things, "protect the environment from environmentally harmful pesticides by prohibiting, regulating, or ensuring proper stewardship of those pesticides." FAC § 11501. To this end, DPR must regulate and control the use of agricultural chemicals that create hazards to domestic animals (including honeybees), the environment, or farmworker and public health as "restricted materials." FAC §§ 14001, 14004.5. DPR must likewise regulate or prohibit the use of any "environmentally harmful materials." FAC § 14102. With respect to neonics in particular, DPR must "adopt any control measures necessary to protect pollinator health." FAC § 12838.

In California, "[a]ny substance, or mixture of substances which is intended to be used . . . for preventing, destroying, repelling, or mitigating any pest" is a "pesticide" subject to DPR's regulatory authority. FAC § 12753(b). Under the FAC and DPR's current policies, non-pesticidal products combined with pesticide active ingredients require registration as "pesticides" unless: (1) DPR individually evaluates and exempts them by rule, FAC § 12803; or (2) the active ingredient is applied "solely to protect the article/substance itself" and is not otherwise "intended to be used to control pests."[1] DPR considers these articles/substances—known as "treated articles"—to fall outside the FAC's definition of "pesticide" under the theory that they are not intended to prevent, destroy, repel, or mitigate a pest.

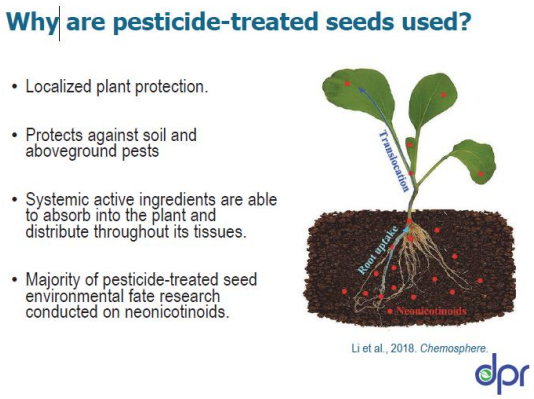
DPR has not individually evaluated or exempted pesticide-treated seeds by rule, while at the same time recognizing that seeds treated with systemic pesticides are intended to control pests beyond protection of merely the seed itself.

At the November Workshop, for example, DPR presented a slide from Li et al. (2018)[2] illustrating exactly how neonic-treated seeds' intended pesticidal effects reach well beyond seed protection. Specifically, they are intended to absorb into plant tissues and bleed into soil, providing "localized *plant* protection" against "soil and above ground pests" that may attack the leaves, roots, and other features of the growing plant.[3]

[1] DPR, Letter to Pesticide Product Registrants and Stakeholders Regarding Registration Requirements for Products Made from Pesticide Impregnated Materials and Bearing Pesticide Claims, California Notice 2015-13 (Dec. 10, 2015), https://bit.ly/3f1xpFc (emphasis in original); *see also* DPR, Regarding the Exemption from California's Regulatory Requirements, Pesticides that Are Exempt from Federal Requirements Pursuant to FIFRA Section 25(b)(2), Initial Statement of Reasons and Public Report, 3 (1999).

[2] Yang Li et al., *Adsorption-desorption and Degradation of Insecticides Clothianidin and Thiamethoxam in Agricultural Soils*, Chemosphere (Sep. 2018), https://bit.ly/3r7u0hi.

[3] See the slide below presented at the November Workshop. Emphasis added.



A slide from DPR's November Workshop detailing the intended pesticidal impacts of neonic-treated seeds. As illustrated, these impacts extend well beyond protection of the seed itself.

Yet despite the agency's clear-eyed assessment of how such treated seeds are intended to work, DPR presumes, as a general policy, that all pesticide-treated seeds are exempt treated articles. At the November Workshop, DPR made numerous comments to this effect:

> "Pesticide-treated seeds however do not fall under the state definition of a pesticide and therefore are exempt from PUR reporting." (Anson Main at 41:10)
>
> "So at this time DPR considers all pesticide-treated seeds, they fall under 'not intended to be used as a pesticide.'" (Jennifer Teerlink at 1:08:38)
>
> "[P]esticide treated seeds do not meet the state definition of a pesticide" (Jennifer Teerlink at 1:30:40)

(November Workshop Video).

DPR must commit to evaluating all pesticide-treated seeds on a case-by-case basis and regulating as "pesticides" all treated seeds with intended pesticidal effects that reach beyond protection of the seed itself. At a minimum, this will require some form of regulation for all seeds treated with systemic pesticides.

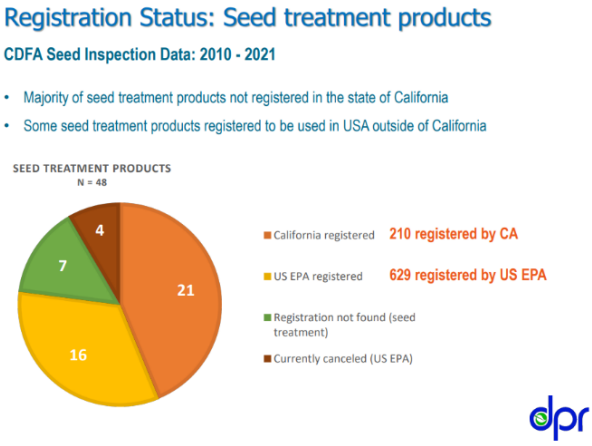
Lastly, commenters note concern regarding the nature of some of DPR's questions for this comment period—e.g., its request for "information on the relative environmental impact of pesticide-treated seeds versus other application methods." While this information is relevant to *how* pesticide-treated seeds should be regulated, it is not relevant to the question of *whether* DPR must regulate them. As noted, at least with respect to seeds treated with systemic pesticides, DPR's duty to regulate is clear and DPR must publicly acknowledge that fact.

II. DPR's Presentation at the November Workshop Illustrates a Considerable Regulatory Loophole that DPR Must Close

Regulation of pesticide-treated seeds is necessary to mitigate their likely considerable effects on California's environment. The Petition details these impacts with respect to neonicotinoid-treated seeds

and outlines how DPR's current policy would allow for seeds treated with pesticides that have not received DPR regulatory approval to be sown directly into California soil. Referencing an NRDC-commissioned report by pesticide risk-assessment expert Dr. Pierre Mineau, the Petition also illustrates how, on an annual basis, the total potential use of neonics on treated seeds may exceed all of the known uses of neonics tracked in the PUR system.

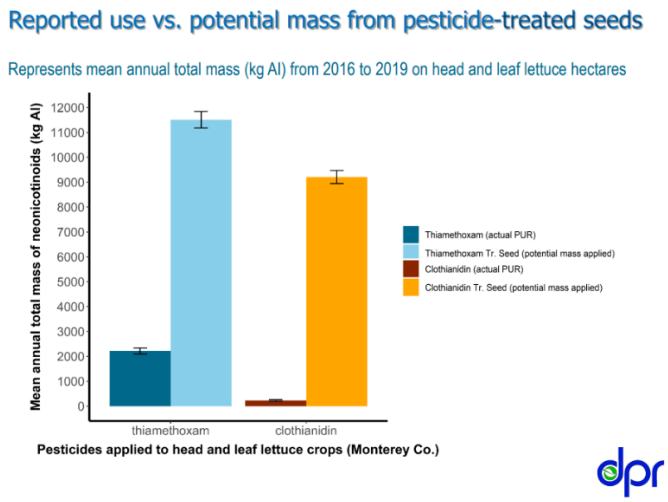
The information presented at the November Workshop confirms the Petition's assessments. Initially, DPR discussed the results of an analysis it conducted using inspection data from the state Department of Food and Agriculture (CDFA) from the last 11 years. It revealed that over two-dozen pesticide products not approved for use in California—the majority of seed treatment products detected—appeared on seeds ready to be planted in California soil.



CDFA data showed over two dozen pesticide non-DPR-approved products on seeds slated to be planted in California.

DPR's stated "concerns" with this data were that: "non-California registered seed treatment products are being planted in the state;" and (2) in some cases, these pesticides were not registered for seed treatment even by U.S. EPA. (Anson Main, November Workshop Video at 33:20). Further, because this information was gleaned from inspections that are not necessarily representative of treated seed use in the state as a whole, DPR remains mostly in the dark about actual treated seed use in California. The "data gaps" it notes include the California crops where seed treatment is used, the total "seed treatment mass" applied, "or even the acres treated." (*Id.* at 37:13).

Other information presented by DPR shows that—while unknown—this use may be massive, far outstripping the known non-seed uses of many pesticides currently tracked in the PUR system. At the workshop, DPR presented the example of a case study it conducted on neonic-treated lettuce seeds, showing that the actual neonic use on lettuce seeds in California could be anywhere from five to thirty-five times higher than the known tracked and regulated use, depending on the active ingredient:



The light blue and orange bars show that the amount of neonics used on lettuce seeds in California may dwarf those that DPR tracks.

These findings underscore the tremendous uncertainty DPR has regarding what, in all likelihood, may be the largest and most widespread uses of many pesticide active ingredients in the state of California.

While we understand DPR's attempt to close these information gaps through the voluntary submission of information to the questions posed in this comment period, these efforts will invariably fall short in actually closing them. Not all persons with information will comment, and, likely, much of the data DPR seeks—e.g., tracking information for how much "pesticide-treated seed is planted in California"— is simply not recorded anywhere. This underscores the importance of DPR performing the duties the FAC charges it with—tracking and regulation of the relevant pesticide-treated seeds.

DPR's other regulatory efforts with respect to neonics also highlight the importance of exercising regulatory control over the relevant treated seeds. Currently, DPR is in the process of proposing mitigation for agricultural neonic uses pursuant to its reevaluation of neonicotinoids and its efforts to comply with the FAC mandate that it "adopt any control measures necessary to protect pollinator health." FAC § 12838. As the Petition notes, however, DPR has failed to evaluate the likely destructive effects of neonic-treated seeds on pollinator health. To the extent neonic-treated seed use approaches or exceeds all the known uses of neonics in the PUR system, failure to include mitigation affecting the use of neonic-treated seed will almost certainly ensure DPR also fails to adopt control measures to protect pollinator health.

The same is true for human health. In DPR's review of imidacloprid in groundwater under the Pesticide Contamination Prevention Act, DPR is charged with ensuring that lawful agricultural use of imidacloprid does not result in groundwater contamination that causes adverse human health effects. If DPR concludes that current levels of imidacloprid in California do pose adverse effects to the health of its residents, what will it do if most of the imidacloprid entering groundwater comes from pesticide-treated seeds? Without exercising direct regulatory control over the use of those seeds, how will it protect the health of Californians?

III. New Information Supports Regulation of Pesticide-Treated Seeds

While DPR already possesses sufficient information to, at minimum, regulate seeds treated with systemic pesticides as "pesticides" as demanded by the FAC, recent information also supports such action. The Petition contains an overall summary of treated seeds' impacts on the environment, but DPR may find the following new research useful as it evaluates the impacts of treated seeds, especially as they relate to soil and water contamination.

Mounting evidence suggests that wild soil-nesting bees can be negatively impacted by soil pesticide contamination, including that stemming from insecticide-treated seeds. Main et al. (2021) found that neonic presence in field soil was associated with significantly lower richness of wild bees and the authors suggested that neonicotinoid seed treatments be curtailed on lands managed for wildlife conservation.[4] As DPR continues to examine the impacts of neonics on pollinators, it is essential that seed treatments are considered as so many of California's specialty crops depend on healthy populations of pollinators in and around agricultural fields.

A recent meta-review of the impact of pesticides on soil organisms, Gunstone et al. (2021), found that pesticides harm or kill soil invertebrates—which includes ground nesting bees—in 70.5% of cases analyzed. Neonicotinoids, specifically, negatively impacted soil taxa between 70% - 80% of the time. Because treated seeds deposit these pesticides directly into soil, they are of particular concern.

We also continue to be concerned about the impacts of pesticide-treated seed on water quality. Recent sampling has continued to find neonics and other systemic insecticides at levels exceeding EPA aquatic life benchmarks, especially in the Central Coast region, with an unknown contribution from seed treatment (Sandstrom et al. 2022).[5] Research in the Midwest found that neonicotinoid concentrations, even below EPA aquatic life benchmarks, in wetlands surrounded by fields planted with treated seed were associated with declines in aquatic invertebrate biomass (Schepker et al. 2020).[6] Frame et al. (2021) explored mass losses from neonicotinoid-treated seed in crop fields in Pennsylvania, finding at least 1.09% of seed-applied neonics were lost in runoff from fields annually.[7] Though that may seem to be an inconsequential figure, the authors note that given the widespread planting of treated seed, "Even a 1.09% mass loss has the potential to cause major pollution over large areas."[8] Troubling levels of neonic contamination have been identified in watersheds dominated by crops planted with treated seed in the Midwest.[9] While California's crop environment is distinct from that of Pennsylvania and the Midwest, this work in concert with DPR's own research in lettuce fields can improve understanding of how seed-applied pesticides move away from fields and into waterways. In assessing this risk, it is critical to consider that many California fields host multiple crop cycles in a given year. Without a strong

[4] Main, A.R., E.B. Webb, K.W. Goyne, R. Abney, and D. Mengel. 2021. Impacts of Neonicotinoid Seed Treatments on the Wild Bee Community in Agricultural Field Margins. *Science of The Total Environment* 786:147299. https://doi.org/10.1016/j.scitotenv.2021.147299.
[5] Sandstrom, M., L. Nowell, B. Mahler, and P. van Metre. 2022. New-generation pesticides are prevalent in California's Central Coast streams. *Science of the Total Environment* 806:150683. https://pubmed.ncbi.nlm.nih.gov/34627915/.
[6] Schepker, T., E. Webb, D. Tillitt, and T. LaGrange. 2020. Neonicotinoid Insecticide Concentrations in Agricultural Wetlands and Associations with Aquatic Invertebrate Communities. *Agriculture, Ecosystems & Environment* 287:106678. https://doi.org/10.1016/j.agee.2019.106678.
[7] Frame, S.T., K.A. Pearsons, K.R. Elkin, L.S. Saporito, H.E. Preisendanz, H.D. Karsten, and J.F. Tooker. 2021. Assessing surface and subsurface transport of neonicotinoid insecticides from no-till crop fields. *Journal of Environmental Quality* 50:476-484. https://doi.org/10.1002/jeq2.20185.
[8] *Id.*
[9] Hladik, M.L., D.W. Kolpin, and K.M. Kuvila. 2014. Widespread occurrence of neonicotinoid insecticides in streams in a high corn and soy producing region, USA. *Environmental Pollution* 193:189-196. https://pubmed.ncbi.nlm.nih.gov/25042208/.

regulatory framework for treated seed, it will be impossible for DPR to monitor and mitigate any negative impacts of treated seed.

IV. Conclusion

In sum, DPR must ensure that all pesticide-treated seeds meeting the definition of "pesticide" under state law are regulated as such. At a minimum, this includes all seeds treated with systemic pesticides. In doing so, DPR may choose to register the relevant treated seeds as it does for other pesticide products, or it may craft an alternative regulatory program. Either way, DPR must ensure that any regulatory action includes tracking of the use of pesticides on such seeds in the PUR system and ensures sufficient mitigation and regulatory controls to protect California's environment and its people.

Respectfully,

Daniel Raichel
Acting Director, Pollinator Initiative
Natural Resources Defense Council

Daniel Gluesenkamp
Executive Director
California Institute for Biodiversity

Nick Jensen
Conservation Program Director
California Native Plant Society

Jane Sellen
Co-Director
Californians for Pesticide Reform

Jonathan Evans
Environmental Health Legal Director, Senior Attorney
Center for Biological Diversity

Rebecca Spector
West Coast Director
Center for Food Safety

Laura Deehan
State Director
Environment California

Greg Loarie
Earthjustice
Counsel for Pollinator Stewardship Council

Kendra Klein
Senior Staff Scientist
Friends of the Earth

Margaret Reeves
Senior Scientist
Pesticide Action Network

Steve Ellis
President
Pollinator Stewardship Council

Sarah Hoyle
Pesticide Program Policy Advocate
Xerces Society for Invertebrate Conservation