Attachment 1 – DPR 22-001 Public Comments and DPR Responses from the 60-Day Public Comment Period

No.	Comment and Response	Commenter	Topic
1	We request that the California Department of Pesticide Regulation (DPR) consider the practical and financial concerns of growers and processors and not move forward with the Proposed Rule. ***DPR identified that neonicotinoids present risks to pollinators in the "California Neonicotinoid Risk Determination" (Risk Determination) and "Addendum to the July 2018 California Neonicotinoid Risk Determination" (Addendum). In accordance with Food and Agricultural Code section 12838, DPR proposed these regulations as control measures necessary to protect pollinator health. As required by Government Code section 11346.3, DPR prepared an economic assessment of the proposed regulations. DPR made several revisions during the development of mitigation measures and during the rulemaking process to reduce the potential economic burden while maintaining appropriate levels of mitigation for impacts to pollinators. These include revising certain application rates, establishing seasonal application caps per crop group rather than restrictions against the use of multiple neonicotinoids to limit compounding residues from multiple applications, revising exemptions for applications in emergency situations to allow applications of neonicotinoids for the control of quarantine pests, adding an exemption for use under Section 18 emergency exemptions to ensure that the proposed regulations will not impact necessary emergency programs under the existing regulations, and adding an exemption for research to provide a mechanism to develop data in support of potential future proposed changes to these regulations. Additionally, in the California Department of Food and Agriculture's (CDFA's) "Economic and pest management evaluation of proposed regulation of nitroguanidine-substituted neonicotinoid insecticides: eight major California commodities" dated July 2, 2021, and DPR's "Estimated Economic and Fiscal Impact of the Proposed Regulations Mitigating Impacts to Pollinators from Neonicotinoids" dated February 1, 2022, DPR considered economic impacts to businesses impacted by these regulations.***	2E	General
2	The new restrictions will impose an unreasonable economic burden on the food processing industry and generate outcomes that are inconsistent with established Integrated Pest Management (IPM) principles. The regulation would reduce the usage rate and the timing window for applications of the four specific neonic products for several important crops. These crop protection materials are critical to the season-long control of pests in crops essential to the food processing industry. Growers rely on the availability of effective crop protection materials to protect their crops from pests and diseases, and their choices of effective materials have diminished over time.	2A	General

	See response to comment # 1. The revised regulations do not limit the practice of IPM. The revisions are expected to provide greater flexibility to employ IPM strategies and control critical pests.		
3	These active ingredients are key components of IPM programs. Reduced ability to use the products named in the Proposed Regulation will cause growers to use other less targeted materials that could result in a decrease in beneficial insects and potential issues with resistance management. This outcome is contrary to the goals of IPM. ***See response to comments #1 and 2.***	2D, 4E, 5A, 16D	General
4	The regulation would increase pest populations by limiting the number and rate of neonic applications to treat glassy-winged sharpshooter (GWSS), mealybugs and potential future pest threats, like the spotted lanternfly. Neonics work by targeting the nervous system of insects. By restricting the number of potential applications and the rate of active ingredient applied, the proposed regulation may render the products ineffective in managing pests like GWSS. Additionally, diluted applications will create an environment for targeted invasive pests to develop resistance. By using low doses over time, GWSS and other pests can develop resistance to previously effective treatments. ***See response to comment #2. Additionally, DPR consulted with the California Department of Food and Agriculture (CDFA) and determined that GWSS are designated as a quarantine pest, and thus applications to treat GWSS may be exempt from the regulation under Section 6990(c)(3). This section provides an exemption under certain circumstances to allow the application of neonicotinoids to control a quarantine pest. If a grower needs to control one of the quarantine pests, then a grower must obtain a written recommendation from a licensed agricultural pest control adviser to apply neonicotinoid products under this exemption. The operator of the property shall retain the written recommendation for at least two years after the application occurs.***	4C	General
5	The availability of neonics has helped lessen reliance on an older generation of less selective pest control products like carbamates, organochlorine, and organophosphorus compounds, and many uses of these compounds have been prohibited or severely restricted. If the use of neonics is heavily restricted under this proposed regulation, growers may need to turn to other products like pyrethroids. Pyrethroids can be effective, but they have limited residual value for controlling pests like GWSS. ***See response to comment #1 and 2.***	4D	General
6	Mitigation for moderately bee-attractive crops is arbitrary and irrational – All bee and pollinator species in California are not “managed pollinators,” except for honeybees and a small handful of other species.	8G	General

	Conditioning mitigation necessary to protect all pollinators on whether managed pollinators are present is arbitrary and irrational. ***DPR acknowledges the comment but disagrees. The use of managed pollinators directly correlates to exposure. DPR determined that a one-size fits all approach for mitigation does not adequately mitigate risk to pollinators as different crops pose various levels of risk. The proposed regulations provide additional protections beyond what is currently required for all crops that could serve as food sources for pollinators. After identifying risks based on residue data, DPR evaluated commodity growing practices to assess when treated commodities may present less risk to pollinators. DPR incorporated a multi-level mitigation approach (as described in the Initial Statement of Reasons) based on the relative attractiveness of each crop to bees, including non-apis bees, in accordance with U.S. Department of Agriculture's (USDA) 2017 report entitled, "Attractiveness of Agricultural Crops to Pollinating Bees for the Collection of Nectar and/or Pollen" (USDA, 2017). In the proposed regulations, there are generally three types of restrictions proposed for each crop group and DPR applies these restrictions based on a multi-level mitigation approach. This multi-level mitigation approach offers higher levels of restriction when crops are expected to provide a large portion of the bees' diet. Additionally, the approach offers lower levels of restriction when crops are not expected to provide a significant portion of the bees' diet, as the level of exposure is not expected to pose a significant adverse risk to bees. See responses to comments #13 and 20 below.***		
7	The proposed distinctions between commercially pollinated crops and crops not hosting managed pollinators do not provide protection for pollinators. ***See response to comment #6.***	9C	General
8	To best protect pollinators and California's agricultural economy, DPR should eliminate all agricultural and outdoor residential uses of systemic persistent insecticides, including neonicotinoids. ***Some of this comment is outside the scope of DPR's regulatory action. In addition, at this time, DPR does not have data indicating a need to eliminate all agricultural and outdoor residential uses of neonicotinoids. Data on file with DPR indicate that neonicotinoids can be safely used on some agricultural crops as allowed pursuant to the proposed regulations.***	9G	General
9	DPR's default reliance on neonicotinoid use prohibitions in the absence of data for some crop groups means that after the effective date of the regulation, any new data supporting alternative crop-specific measures could only be considered in the context of a subsequent formal rulemaking process. As a practical matter, that procedural hurdle is likely to foreclose any further investments in research to characterize neonicotinoid risks more accurately to pollinator health. We recommend that DPR include an	10C	General

	administrative process in the regulation that allows for future adjustment of crop-specific mitigation measures based on new data and commit to an ongoing collaborative research program with growers to fill current data gaps. ***In response to this comment, DPR added subsection 6990(c)(5) to the proposed regulations which provides a mechanism to develop data in support of potential future proposed changes to these regulations. Once new data becomes available, DPR may evaluate and amend the regulations through the regular rulemaking process.***		
10	Support for DPR's proposals to exclude various crops harvested before and after bloom from neonicotinoid use restrictions, and appreciation for the scientific analysis indicating that these applications present de minimis risks to pollinators. We agree that use restrictions in these applications would serve no functional purpose other than to limit the IPM tools available to growers, which is likely to accelerate the development of pest resistance to alternative active ingredients. ***DPR acknowledges this comment.***	10H	General
11	We request that DPR include mechanisms in the regulation to monitor crop-specific outcomes and quantify adverse impacts on pest management. This additional data will be necessary to support future adjustments to the regulation to optimize the critical balance between pollinator protection and effective pest management. ***See response to comment #9.***	10I	General
12	Risk mitigation must include protections for wild pollinators. While honeybee health was part of the rationale for DPR's re-evaluation initiated in 2009 and for the legislature's action, Section 12838 of California's Food and Agricultural Code states that "the department shall adopt any control measures to protect pollinator health." Clearly, the legislature intended for DPR to protect *all* pollinator species from the harms of neonicotinoids, not just honeybees. The current mitigation proposal leaves wild pollinators under-protected, since many crop-specific mitigation measures are only required where managed pollinators are present. ***DPR's July 2018 Neonicotinoid Risk Determination (Risk Determination) and subsequent January 2019 Addendum to the July 2018 Neonicotinoid Risk Determination (Addendum) serve as the foundation for identifying risks to pollinators and the proposed mitigation measures. The Risk Determination and Addendum focused on potential effects of neonicotinoid exposure to honey bees (Apis mellifera) through feeding on nectar and pollen containing neonicotinoid residues. DPR used Apis bees as a surrogate for other non-Apis species of bees (e.g., bumble bees), and based No Observed***	12D	General/ scope of regulations

	Effects Concentration (NOEC) values and subsequent proposed control measures on honey bee data. This surrogate approach, which also provides a level of protection for native bees and other non-Apis species, is consistent with the "Guidance for Assessing Pesticide Risks to Bees" (U.S. EPA, PMRA, and DPR, 2014). Additionally, DPR's proposed mitigation measures, such as application rate and timing restrictions, caps for seasonal application rates, and a prohibition on applications during bloom, will provide a level of protection for all insect pollinators beyond Apis bees. Also see response to comment #20 below.		
13	For some crops, DPR proposed rates are below the current label rate. These rates are not efficacious and therefore will not provide control of target pests. Industry cannot support use of products at a rate that is not efficacious as that undermines IPM programs designed to limit resistance and prolong the efficacy of products in the marketplace. ***DPR has legal authority to adopt mitigation measures that are more stringent than federal requirements or labeling. DPR is proposing application rate and timing restrictions for each active ingredient/crop group based on the available residue data for that crop group that did not exceed the established NOEC values for that active ingredient. Residue data were not available for every active ingredient on every crop group necessitating the need to bridge crop residue data across active ingredients. In some cases, this has led to a proposed application rate more restrictive than allowed on the label. The regulations do not require an applicator to use a lower application rate; rather, they prohibit an applicator from using a rate above that specified in the regulation.***	13A	General/ grapes
14	For some uses, the maximum allowed load per application method per season is below the minimum rates required for efficacy provided on the label. These minimal rates are required based on extensive scientific studies by the registrants to ensure efficacy of the targeted pests and were also the rates included in the efficacy data provided to DPR as required during the registration process. We are also concerned that the proposed minimum rates will in turn lead to ineffective pest control, which could lead to increased use of alternative pesticides. This is contrary to IPM best management recommendations and practices. The application rates are based at, or below, the rate at which observable effects were not present in honey bees. While this approach may mitigate the risk to pollinators, it presents other issues of equal importance that must be considered by DPR. DPR has a statutory mandate to "provide for proper, safe, and efficient use of pesticides essential for the production of food and fiber…," California Food and Agriculture Code ("FAC" § 11501(a)). What efficacy data has DPR reviewed for the neonicotinoids to ensure the reduced application rates will in fact provide insect control? Registrants cannot support applications of their products below labeled rates. With this in mind, we are concerned the maximum pounds of neonicotinoids applied per season under certain conditions for some crops are de facto bans of certain labeled active	16C	General

	ingredients. If growers must utilize off-label rates of certain active ingredients, they would not be able to substantiate performance complaints when using sub-lethal rates. We are asking for clarification on how DPR envisions addressing these outcomes from the regulation. ***See responses to comments #2 and 13.***		
15	Currently, neonicotinoids are under review at USEPA. We ask that DPR postpone implementing its regulation until the Interim Decision has been released by USEPA. Prior to formal implementation, DPR should consider how it will coordinate its new non-label use requirements with the new label requirements from U.S. EPA's Interim Decision. ***DPR plans to make the proposed regulations effective on January 1, 2024. Since DPR is not proposing label changes, the implementation process is not expected to conflict with the United States Environmental Protection Agency's (U.S. EPA's) future mitigation. If there are conflicting mitigation proposals between DPR's regulations and U.S. EPA's future label changes, the strictest mitigation measure must be followed. DPR plans to provide training and outreach materials on the regulations to assist with compliance.***	16O	General
16	The proposed regulation poses label compliance challenges. Registrants are required to demonstrate and guarantee product efficacy levels that this proposal may render unachievable. The proposal may restrict application rates far below the registrant's label. Pest control uses on labels are required to be supported by the registrant in accordance with both the USEPA federal regulations and CA state-specific regulations. At the state level, DPR regulation [Title 3 CCR 6186] requires that each application for registration or amendment to the labeling of a pesticide shall be accompanied by data supporting each efficacy claim. Such data shall be obtained under California or similar environmental use conditions and shall take into consideration differences in plants, soils, climate conditions, and application techniques. Will DPR require registrants to amend the Section 3 label to include reduced rates? If so, this could conflict with federal regulations and the Department's own efficacy evaluations. Because the mitigation measures will not be implemented via label change, it will be difficult for users to comply with the regulations. As the label is the law, which is always emphasized by DPR, registrants cannot advise users on application rates that impact efficacy that does not meet label requirements. Yet the proposal will require such off-label applications. Was an agronomic analysis completed to base the new lowered rates? ***DPR is proposing regulatory requirements, not label changes. DPR has adopted other requirements through rulemaking that complement requirements on pesticide labels. See response to comment #13.***	17A, 17B	General

17	Will DPR update the regulations if new residue data is submitted to support new uses, or to address data gaps that existed at the time of reevaluation? ***See response to comment #9.***	17B	General
18	DPR must provide farmers with greater clarity on how the regulations will be implemented to know how their best management practices will be affected. Who will be responsible for advising farmers on product efficacy levels under the new off-label rate restrictions? Will there be a table that compares the DPR application rates to the current label (lbs. ai/A)? Will the distributors be aware that anyone who buys neonic products they sell will have to be given the regulations to assure compliance? How will this information be provided? If the user does not comply with the regulation, who will enforce them? If the County Agricultural Commissioner (CAC) will be the one who will enforce the regulation, what funding will be available for them to enforce the regulation? Since the regulation is complicated and requires identification of crops, application timing, application rates and specific crop groups, how will the CAC staff be able to implement and enforce that? ***CAC offices are the local government agencies responsible for enforcing pesticide regulations in California, including any changes to pesticide regulations such as the proposed regulations. DPR establishes an annual work plan with the CACs, which already requires the CACs to conduct pesticide use inspections and investigations and enforce compliance with California worker protection laws and regulations. CACs will continue to enforce regulations according to their work plan. Additionally, pesticide applicators are required to follow the pesticide label, be aware of and follow all applicable pesticide regulations, and complete regular training through the continuing education program. DPR acknowledges that the proposed regulations are complex and plans to provide training and outreach materials in advance of the effective date of the regulations to assist with compliance.***	17B, T2-A	General
19	Strong suggestion that DPR provides a series of workshops for stakeholders on the implementation of the proposed regulations. These regulatory proposals have a much greater complexity in the use and management of neonics. But farmers, beekeepers, PCAs, and Agriculture Commissioners need to have a better understanding prior to the implementation of the new regulatory program. ***See response to comment #18***	T2-B	General
20	The summary of DPR's risk reevaluation states that "Multiple factors may contribute to declining pollinator health including possible effects from pesticides, pathogens, and pests such as the Varroa mite, and lack of variation in forage and nutrition" yet the discussion that follows focuses solely on possible impacts from exposure to neonicotinoids. Nothing in the ISOR explores the extent of neonicotinoid impacts on pollinators relative to the other identified factors. This analysis is necessary to determine	10A	Scope of regulations

	whether the proposed restrictions will achieve the purpose of the regulation – to protect pollinator health – and whether they are the most cost-effective means of achieving that purpose. If such analysis exists elsewhere, it should at least be cited in the ISOR. Otherwise, the agency should present evidence in the ISOR quantifying the relative contribution of neonicotinoids to declining pollinator health and evaluate alternative strategies for mitigating other risk factors. ***The scope of DPR's regulatory action is defined by its reevaluation and risk determination regarding honey bee exposure to neonicotinoid residue in the nectar and pollen of agricultural crops. On February 27, 2009, DPR placed certain pesticide products containing the nitroguanidine-substituted neonicotinoid active ingredients imidacloprid, thiamethoxam, clothianidin, and dinotefuran, into reevaluation to assess the magnitude of their residues in the pollen and nectar of agricultural crops and the corresponding levels of risk to honey bee colonies.*** ***In 2014, the California Legislature adopted Assembly Bill (AB) 1789 (Chapter 578, Statutes of 2014), adding section 12838 of the Food and Agricultural Code (FAC) into law. FAC section 12838 required DPR to "issue a determination with respect to its reevaluation of neonicotinoids" based on rising honey bee colony losses and potential impacts to California's agricultural economy on or before July 1, 2018. (Food & Agr. Code § 12838(a).) In compliance with FAC section 12838, DPR issued its Neonicotinoid Risk Determination in July 2018. In January 2019, DPR published an Addendum to the Neonicotinoid Risk Determination based on additional submitted information. DPR's Risk Determination and Addendum used data collected pursuant to the reevaluation to analyze the potential effects of neonicotinoid exposure to honey bees through feeding on nectar and pollen in agricultural crops treated with the subject neonicotinoids, comparing the levels of neonicotinoid residues to concentrations that cause colony-level effects such as decreased colony strength and decreased stores of honeycomb.*** ***Subsection (b)(1) of FAC section 12838 required DPR to adopt control measures necessary to protect pollinator health within two years of issuing its Risk Determination. FAC section 12838 thus tied the adoption of control measures to the scope of DPR's reevaluation and the analysis in its Risk Determination and Addendum documents. As required by FAC 12838, DPR noticed proposed neonicotinoid pesticide exposure protection regulations to address the risks identified in its Risk Determination and Addendum on February 25, 2022.***		

	While this comment is outside the scope of DPR's regulatory action, DPR reviews all registered pesticides, including neonicotinoids, for adverse impacts as part of its program of continuous evaluation.		
21	The proposed regulations fail to include important sources of neonic pollution relevant to pollinator health, including non-agricultural uses and uses for the production of ornamental plants at nurseries. As noted, DPR's reevaluation was triggered by information regarding risks to bees from ornamental neonic uses. Nevertheless, DPR excluded these uses from the 2018 Risk Determination, the Proposed Mitigation, and, now, the Proposed Regulations. The available scientific evidence suggests that neonic use on highly bee-attractive ornamental plants pose some of the highest known risks to bees and other pollinators, and that the application rates tend to be significantly higher than those approved for many other agricultural uses. Further, evidence of significant neonic water contamination in California in urban and suburban areas suggests considerable outdoor use of neonics in non-agricultural settings. The precise scope of ornamental use is unknown, however, simply lacking data does not excuse DPR from discharging its duties under California law. DPR must evaluate and mitigate risks to pollinator health from turf and ornamental neonic use in both agricultural and non-agricultural settings, and must also consider impacts from other relevant, non-agricultural neonic uses. Failure to do so violates the 2014 Pollinator Law. ***See responses to comments #12 and 20 regarding the scope of this rulemaking. DPR continues to evaluate the impacts of neonicotinoid use and has separately begun the process of evaluating non-agricultural uses.***	8A, T1-B	Scope of regulations
22	The Proposed Regulations fail to include important sources of neonic pollution relevant to pollinator health including neonic-treated crop seeds. DPR must evaluate and mitigate against impacts to pollinators that arise from the use of neonic-treated crop seeds. Although DPR notes in the 2018 Risk Determination and in its response to comments that available data for several seed-treated crops showed that nectar and pollen concentrations were below the No Observable Effects Concentration (NOEC) for harm to honeybee colonies, other research shows that these treated seeds pose considerable risks to pollinators. Of note, an extensive June 2020 report—which reviewed over 1,100 peer-reviewed papers on various neonic uses and pollinator health—found that neonic-treated seeds pose "substantial" risks to pollinators. Likewise, the multi-year, multi-country, multi-million-dollar field study on neonic-treated seeds pollinator health—the largest to date and funded by the pesticide industry itself—found that such seed treatments "negatively affect pollinator health." DPR must consider neonic-treated seeds' impacts to pollinator health resulting from multiple exposure pathways, together with other sources of neonic exposure. Wholesale exclusion of neonic-treated seeds from DPR's evaluation of or mitigation for neonics' harms to pollinator health fails to satisfy the 2014 Pollinator Law.	8B, T1-A	Scope of regulations

	See response to comment #20 regarding the scope of this rulemaking. Some neonicotinoid pesticide labels allow use as a treatment on seeds grown for agricultural food and feed commodities. DPR and U.S. EPA evaluated risks from residues in pollen and nectar of crops with neonicotinoid seed treatment applications in the preliminary pollinator risk assessments (documents relied upon 26, 28, and 29). The preliminary assessments concluded that seed treatment applications result in low neonicotinoid residues in pollen and nectar and thus pose a low risk to honey bees. DPR concurred with this assessment in its 2018 Risk Determination. Therefore, seed treatment applications are not a part of the proposed mitigation measures. For more information on DPR's work on pesticide-treated seeds, visit https://www.CDPR.ca.gov/docs/emon/surfwtr/pest_seeds.htm.		
23	DPR should consider and mitigate for neonic harms to other non-insect pollinating species – Birds, like hummingbirds, as well as lesser long-nosed bat and Mexican long-tongued bat, are important pollinators in California. Extensive research demonstrates neonics' toxicity to birds, and research also suggests adverse effects of neonic exposure in bats. ***See response to comment #20 regarding the scope of this rulemaking.***	8H	Scope of regulations
24	DPR must consider acetamiprid's harm to bees. This chemical should have been reevaluated alongside the nitroguanidine neonics. Despite its inadequate assessment of pollinator risk, U.S. EPA has identified risks of concern to honeybees from acetamiprid use other research has identified sublethal effects on bees. Moreover, acetamiprid is highly toxic to birds, which includes some pollinators. ***See response to comment #20 regarding the scope of this rulemaking.***	8J	Scope of regulations
25	DPR's reevaluation focuses narrowly on the effects of neonics on honeybees as a surrogate for all pollinators, however, California law requires DPR to look beyond risks to pollinators and prevent harmful pesticide use more broadly. Neonics present a variety of serious risks to ecosystems and human health, which DPR must address in its reevaluation: • Neonics are contributing to mass losses of birds • Neonics contaminate and hollow out aquatic ecosystems • Neonics contribute to an "Insect Apocalypse" that extends far beyond bees • Neonics harm mammals • Neonics pose serious risks to people ***See response to comment #20 regarding the scope of this rulemaking.***	8K	Scope of regulations
26	Seed treatments contribute the majority of neonicotinoid use in California, but their use and subsequent impacts are not addressed by DPR's proposed regulations.	9A, 15C	Scope of regulations

	See responses to comments # 20 and 22.		
27	DPR needs to include all systemic, persistent insecticides in these regulations, not just the four nitroguanidine neonicotinoids. ***See responses to comments #8 and 20 regarding the scope of this rulemaking.***	9E	Scope of regulations
28	Organosilicone adjuvants are agrochemicals often used in concert with neonicotinoids that also have many harmful effects on honeybee fitness. Adjuvants harm honeybee health and learning. Additionally, the effects of adjuvants spread throughout the hive, affecting the ability of the colony to rear new queens. Adjuvants also appear to have synergistic effects and increase the harms caused by viruses in colonies. How will the proposed regulatory action deal with growing evidence that these agrochemical adjuvants are harmful to bees? ***See response to comment #20 regarding the scope of this rulemaking.***	9K	Scope of regulations
29	Poor nutrition can synergistically increase the harms of flupyradifurone, which is not a neonicotinoid but also acts on insect nicotinic acetylcholine receptors. Similarly, nutritional stress, in combination with consumption of field-realistic doses of clothianidin (1/5 of LD50) and thiamethoxam (1/25 of LD50) reduced bee survival by 50%, food consumption by 48% (thereby exacerbating nutritional deficits), and levels of essential sugars (glucose and trehalose) in bee hemolymph. How will the proposed regulatory action consider synergistic stressors that bees face such as poor nutrition when determining bee-safe application levels? ***See response to comment #20 regarding the scope of this rulemaking.***	9L	Scope of regulation
30	The direct threat that neonicotinoids pose to honeybees and other insect pollinators also presents an indirect threat to animals and to human health. These risks include but are not limited to cytotoxicity, genotoxicity, reduced immune function, decreased growth, reduced reproductive success, acute respiratory defects, neurological disease symptoms, cardiovascular disease, and birth defects. How will the proposed regulatory action consider and mitigate these risks, particularly for California workers who are exposed to neonicotinoid pesticides? ***See response to comment #20 regarding the scope of this rulemaking.***	9P	Scope of regulations
31	Support for DPR's decision to exclude seed treatments from this rulemaking. ***DPR acknowledges this comment.***	10B	Scope of regulations
32	Neonicotinoid products used in residential areas, on ornamental species, and in other non-agricultural settings also need to be considered to protect pollinators in the state. Without assessing this significant	12C	Scope of regulations

	source of neonicotinoid exposure, pollinators from backyard honeybees to imperiled native species are at risk when they visit non-agricultural landscapes. Beyond pollinator risks, any neonicotinoid use contributes to off-site movement into broader ecosystems and the load of insecticides that species may encounter. We urge DPR to consider all neonicotinoid products used in California for further mitigation to protect pollinators and ecosystems. ***See responses to comments #20 and 21.***		
33	Many of California's pollinators are already facing declines that may be in part due to pesticide use. These species are vulnerable to further population loss and are threatened by the continued widespread use of neonicotinoids. Recent declines in the population of the western monarch butterfly and the acceptance of four bumble bee species as candidates for protection under the California Endangered Species Act demonstrate the perils that wild pollinators are facing. Other butterfly species in California may also be facing declines driven in part by neonicotinoid use. DPR's current proposal focuses solely on pollen and nectar residues, so does not address the risks faced by butterfly and moth caterpillars, which consume leaves that can be contaminated with pesticides. While there are certainly several factors that play into the declines of these and other species, pesticides, and especially neonicotinoids, cannot be ignored as a significant contributor. ***See responses to comments #12 and 20 regarding the scope of this rulemaking. Additionally, DPR's proposed mitigation measures, such as application rate and timing restrictions, caps for seasonal application rates, and a prohibition on applications during bloom, will provide a level of protection for all insect pollinators beyond Apis bees.***	12F	Scope of regulations
34	A more comprehensive risk assessment of treated seeds must be completed. Neonicotinoid seed treatments present risks that are often overlooked, including in California's current risk mitigation approach and regulatory scheme. In the pollinator risk assessment, DPR discounted potential impacts from crops grown from treated seeds because pollen and nectar residues were low. However, the widespread use of seed treatment can still lead to exposure scenarios for pollinators and other species. Research has estimated that only 2-20% of neonicotinoids coated on seed are taken up by that plant, leaving a significant portion of applied pesticides in the soil matrix and available to move into waterways. ***See responses to comments #20 and 22.***	12G	Scope of regulations
35	Neonicotinoid use negatively impacts aquatic species and broader ecosystems. Uses of neonicotinoids that harm pollinators are also moving off-site from where they are applied and into California's waterways. Rice is not subject to DPR's proposed neonicotinoid mitigation, but California's ecosystems are very likely impacted by neonicotinoid applications to this crop. There are several regions throughout the state	12H	Scope of regulations

	where imidacloprid is found at concerning levels in surface water. We recommend that DPR develop additional restrictions on neonicotinoid use in order to protect aquatic ecosystems from insecticide contamination. DPR must also consider the contribution of non-agricultural uses of neonicotinoids to water quality. Many residential areas of California are also seeing high levels of imidacloprid contamination, The current mitigation strategy does not address risks from non-agricultural sources, but these can impact both pollinators and aquatic systems. ***See responses to comments #20 and 21.***		
36	The proposed regulations have a myopic focus on honeybees. Commercially managed honeybees represent only one species of pollinators in California. There are an estimated 1,600 native bee species in California. About one-third of California's pollinator-dependent crops are pollinated by native bee species, the majority of which live in ground burrows, snags or twigs. Scientific reports suggest that at least several of these native bees are more sensitive to neonicotinoid toxicity than honeybees. Yet neither the risk determination nor the proposed regulations attempt to characterize or afford protection from neonicotinoid exposures to these important insects. Nor is any consideration given to protection of other pollinators, such as butterflies, wasps, birds, bats and others. ***See responses to comments #20 and 12.***	15A	Scope of regulations
37	The proposed regulations fail to address other major routes of exposure to both honeybees and other pollinators through Non-agricultural uses in urban and suburban settings are excluded. Although DPR claims to have insufficient data to regulate non-agricultural neonicotinoid uses, this appears to be the result of a Departmental decision not to develop such information either intra- or extramurally. There are published data indicating that unregulated neonicotinoid exposures to pollinators in residential and other non-agricultural settings can be much higher than those currently permitted in California agriculture. Not even attempting to evaluate the potential impact of such exposures suggests a Departmental failure to comply with its statutory mandate. ***See responses to comments #20 and 21.***	15B	Scope of regulations
38	Dinotefuran is generally less toxic to honeybees than other neonicotinoid insecticides. Therefore, it's not appropriate that the maximum application rates for dinotefuran be automatically set at the same levels as other neonicotinoids. ***In the absence of residue data for a specific active ingredient, DPR relied upon residue data from another active ingredient within the same crop group. The residue studies were then compared back to the toxicity values of each active ingredient to determine risks. DPR did not "automatically" use the***	1A	Scientific background

	maximum application rates for dinotefuran for other neonicotinoids. Rather, DPR performed a scientific analysis of the residues at each application rate to determine the risks for each active ingredient, as described in the DPR memo titled, "Additional Information Related to the Department of Pesticide Regulation's (DPR's) 2018 California Neonicotinoid Risk Determination and Addendum" (Tafarella, 2020).		
39	Dively and colleagues (2015) conducted a colony-feeding study to assess the chronic effects of an imidacloprid supplemented pollen diet on honeybees. Over a period of 12 weeks, honey bees were exposed to diet patties containing nominal imidacloprid concentrations of 0, 5, 20, or 100 µg/kg. Due to uncertainty in this study, the highest concentration tested was used as the No Observed Adverse Effect Concentration (NOAEC) in the DPR Risk Determination for assessment of exposure to pollen. We previously argued that the Dively et al. (2015) study lacked significance and that future evaluations should instead "bridge" to a NOAEC based on a more reliable clothianidin study as was done in the DPR Risk Determination for other neonicotinoids. DPR has now concluded that the colony feeding study with pollen patties is not reliable due to the magnitude of the associated uncertainties. We agree with this conclusion and appreciate the consideration of our previous comments. We agree with the bridging strategy used in the revised draft, which applies the pollen NOAEC for clothianidin (372 µg/kg) to imidacloprid, as was done with thiamethoxam and dinotefuran in the DPR Risk Determination. ***DPR acknowledges this comment.***	6F	Scientific background
40	An expected environmental concentration (EEC) for imidacloprid in nectar was established by the DPR Risk Determination using a study conducted by Byrne et al. in which imidacloprid residues were measured in the nectar of citrus trees following soil treatments applied at the maximum label application rate (0.5 lb/a.i./A). DPR conducted statistical analyses to derive the 90th percentile value of the residue in nectar and used this value as a "realistic, yet protective" EEC. The EEC of imidacloprid in nectar following 1 soil application was determined to be 25.0 µg/kg in the original DPR evaluation. In the revised 2022 evaluation, the EEC has been updated to 24.59 µg/kg. No information was provided characterizing the distribution of the underlying dataset; therefore, it is unclear what change was implemented in the data evaluation that resulted in the new EEC value. Clarification should be provided on the change in the underlying dataset that resulted in the revision of the EEC value for imidacloprid in nectar to 24.59 µg/kg.	6A, T4-A	Scientific background

	The data and DPR's evaluation of data have not changed. The EEC value for imidacloprid in nectar was determined and remains to be 24.59 µg/kg. Previous documents reporting the value at 25.0 µg/kg were due to a difference in rounding that has since been corrected.		
41	A colony-feeding study conducted by Bocksch (2014) was used to establish the endpoint for imidacloprid in nectar. In 2016, the United States Environmental Protection Agency (EPA), Canada's Pest Management Regulatory Agency (PMRA), and DPR performed a joint statistical analysis of the results of this study. The analysis concluded that the NOAEC and the Lowest Observed Adverse Effect Concentration (LOAEC) were 25 µg a.i./L and 50 µg a.i./L, respectively, for exposure to imidacloprid in nectar. However, in the 2018 Risk Determination, DPR used the mean measured concentration of 23 µg/kg as the NOAEC. Because of the lack of significant difference between the mean measured concentration and the nominal concentration, the nominal concentration should be used as the NOAEC value, as was concluded in the joint analysis by EPA, PMRA, and DPR. The stability of imidacloprid in feeding solution was demonstrated, with measured concentrations remaining within 10% of the nominal concentration throughout the study (Hou et al. 2016). The decision of whether to use the nominal or the measured concentration determines the outcome of the risk assessment. When the calculated risk quotient (RQ = EEC ÷ NOAEC) exceeds 1, risk is considered to exist. It is important to note that RQs are calculated using conservative estimates, including the assumption that bees would obtain 100% of their nectar from citrus crops treated with imidacloprid at the maximum label application rate. If the measured concentration is used, the RQ is just above 1 (RQ = 24.59 µg a.i./L ÷ 23.3 µg a.i./L = 1.06), while if the nominal concentration is used, the RQ is just below 1 (RQ = 24.59 µg a.i./L ÷ 25 µg a.i./L = 0.98). Because the results of the risk determination hinge on the choice between the measured and nominal concentrations and the difference between these values is insignificant, the nominal concentration should be used. We reiterate that in the joint review by three regulatory agencies the selected endpoint was 25 µg/L. By selecting a different value, the proposed regulations are contrary to the previous DPR assessment. ***The proposed regulations are based on a mean measured concentration from a colony-feeding study for the imidacloprid nectar NOEC. The imidacloprid nectar NOEC of 23 µg ai/kg is the mean measured concentration of active ingredient in the feeding solution provided to honey bee colonies. DPR previously used an endpoint for the imidacloprid nectar colony feeding study based on nominal concentrations. After further consideration, DPR determined that the mean measured value is a more accurate representation of the concentration that colonies were exposed to during the study, thus, the endpoint used to identify risk was not based on a nominal value as previously concluded in the Risk***	6B, T4-B	Scientific background

	Determination and Addendum. The decision to use a mean measured concentration for the imidacloprid nectar NOEC is consistent with U.S. EPA's approach (U.S. EPA. 2020).		
42	The proposed regulations fail to account for the time cumulative harm to pollinator health from all relevant, real-world exposure pathways. Neonic pesticides work by permanently binding to insect nerves, causing permanent nerve damage. For that reason, damage to pollinators and other insects is "time cumulative"—meaning that neonic exposures, no matter how small, add up to the total health burden over time. In other words, the relevant measure for harm to pollinator health is the total cumulative exposure of a pollinator over its lifetime, not solely whether a particular exposure rises above an acute threshold. Accordingly, DPR's method of measuring pollinator health, which considers only uses that "would result in substantial exposure to honey bees" in complete isolation from all other exposures, is fundamentally flawed. DPR's vague and conclusory assertion that bees face "less exposure" from other exposure pathways fails to satisfy DPR's duty to assess and mitigate pollinator health risks from all relevant pathways. DPR does not state whether exposures from these pathways would exceed the colony-health NOEC or other measures for pollinator health. Moreover, the critical measure is whether these exposures, in addition to the exposures from pollen and nectar over the lifetime of the pollinator, affect health and reproduction. DPR revealed what is likely a key reason for its decision to ignore time cumulative impacts in its response to peer review comments when it stated that "there are currently no standard methods for incorporating all potential routes of exposure into a risk assessment." Be that as it may, DPR has an obligation to attempt to devise such a method, or at the very least, strengthen the mitigation to account for that uncertainty (i.e., by applying an uncertainty or "safety" factor). Ultimately, DPR must account for the reality that almost all bees will encounter multiple other exposures to neonic pollution beyond the pollen and nectar of a particular crop, and that it is the cumulative harm of all these exposures that determines their impact on pollinator health. ***In collecting and analyzing data pursuant to the reevaluation and risk determination processes, DPR evaluated the potential effects of multiple individual potential honey bee exposures to neonicotinoid residues in pollen and nectar resulting from multiple applications over the course of a growing season and from multiple neonicotinoid active ingredients. As described in the ISOR, higher risks may result when multiple neonicotinoid active ingredients are applied or when both soil and foliar application methods are used on the same crop as the residues may compound or have synergistic effects. Thus, DPR proposed a seasonal application cap for each crop group to limit compounding residues and time cumulative effects.***	8C, T1-C	Scientific background

	Furthermore, DPR is using the most up-to-date risk assessment methodologies for assessing risks to bees and is consistent with other regulatory agencies such as U.S. EPA. DPR has taken a conservative approach and incorporated a high degree of protection in each step of the risk evaluation and mitigation development process. The conservatism includes the use of field-based reside studies (non-lab based) to determine what a pollinator would be exposed to in the environment, hand-collected residue samples (as opposed to bee samples) and assessing the 90th percentiles of residue values to determine risk levels. Additionally, the residue studies were also conducted at a maximum application rate combined with minimum reapplication intervals (over consecutive seasons). DPR also relies upon field-based colony-feeding studies, to determine real-world effects. And lastly, DPR's evaluation added safety factors by not using residue decline curves or scaling applications. DPR only made risk determinations on application rates and application timing that have been tested in the field. The numerous conservative decisions that DPR has made in this risk assessment cumulatively help address uncertainty in the process in order to protect pollinators. Lastly, see response to comment #20 regarding the scope of this rulemaking.		
43	The failure to assess cumulative impacts is also apparent in other exposure sources that DPR did consider quantitatively (at least to some degree). For example, farmers can apply neonics later to crops that are planted with a neonic-treated seed, so DPR must identify the crops where these pesticides use patterns are possible and, at minimum, set a total use cap that includes pollen and nectar exposures resulting from use on treated seeds. ***See response to comment #20 regarding the scope of this rulemaking. DPR did evaluate seed treatment applications, see response to comment #22. For studies conducted with seed treatment applications only, DPR concluded that seed treatment applications result in low neonicotinoid residues in pollen and nectar and thus pose a low risk to honey bees. When evaluating the risk to bees from soil and foliar applications, DPR relied upon numerous studies where the field was planted with treated seeds before receiving soil and/or foliar treatments. Therefore, cumulative impacts were considered for several crop groups in which data was available. See the document relied upon titled, "Update to the Identification of Crop Residue Studies for Development of Proposed Pollinator Protection Regulations in Response to the Neonicotinoid Reevaluation" (DPR 2022).***	8C	
44	DPR also fails to evaluate risks to non-target plants because of a "lack of widespread or registered use" and because neonics "are not registered for use on wildflowers and weeds" and accidental application through drift "is illegal" is likewise not excusable. Neonic uses commonly bleed into adjacent wildflowers, where neonic concentrations can even exceed those of the target crop. Since pollinators visit both, both must be considered. Further, whether drift—including from abraded seed dust—is legal or not,	8C	

	it is predictable, and DPR must account for and mitigate for those impacts cumulatively with all other exposure sources (pollen and nectar combined) to ensure the protection of pollinator health. Lastly, DPR must recognize that even where the agency is considering multiple neonic exposures from a particular crop, bees often visit multiple crops during any particular year. Honeybees in particular are vulnerable—both because of their long foraging range (up to several miles) and because they are moved during the growing season—although wild bees remain at risk too. ***See response to comment #20 regarding the scope of this rulemaking.***		
45	Honeybee colony health is a poor proxy for pollinator health. California has 1,600 species of native bees and hardly any of them form colonies or produce honey. While commenters understand that DPR cannot collect data for thousands of bee species, colony-level harms are largely irrelevant to the vast majority of California's pollinators. A more relevant measure—and one DPR does have data for—are harms to individual honeybees. These harms are much more reflective of most California bees, which are solitary, and for which the death of the individual often translates to the death of the family line. DPR fails to consider the sublethal effects of neonic exposure. In considering harms to individual bees, DPR must consider both lethal and sublethal endpoints. Neonics can dramatically weaken bees' survival systems at levels much lower than those expected to cause death. These sublethal endpoints are particularly relevant for most native bees, which are solitary, and must be able to create shelter, forage for food, ward off predators and disease, and reproduce on their own to ensure survival of the population. ***See responses to comments #12, 20, 33, and 42 regarding the scope of this rulemaking, protection provided for species beyond honey bees, and DPR's conservative approach to the risk determination.***	8D, 8E, T1-D	Scientific background
46	DPR's analysis fails to account for exposure to neonics through contaminated soil – An estimated 70% of California's 1,600 native bees, which are crucial pollinators of wild plants and crops, are ground-nesting. For these species, contact with contaminated soil is likely to be a primary route of exposure to neonics. DPR's analysis cannot adequately address risks to pollinators by failing to assess risks from this exposure route. ***See responses to comments #20, #33, and #42 regarding the scope of this rulemaking, protections provided for species beyond honey bees, and DPR's conservative approach to the risk determination.***	8F	Scientific background
47	DPR should consider the impacts of exposure to neonics cumulatively with other pesticide classes and stressors – DPR looks at the effects of exposure to each neonic active ingredient individually, whereas pollinators are often exposed to multiple neonics and other classes of pesticides during foraging. Moreover, as Dr. Krupke pointed out in his peer review comments, "bees never encounter neonicotinoids	8I	Scientific background

	in isolation," and we know from the academic literature that neonics work in tandem with other stressors such as other pesticides or parasites (e.g., varroa mite) to dramatically increase their lethality to bees. While DPR notes that accounting for myriad stressors is "complex and challenging," DPR must somehow account for the effect that neonics have of magnifying their harms to bees. One solution may be to apply a "safety factor" to the existing thresholds to account for this uncertainty. ***See response to comment #20 regarding the scope of the proposed rulemaking. Also see response to comment #42 regarding DPRs analysis of multiple impacts, the proposed seasonal application cap to combat cumulative impacts, and DPR's conservative approach to the risk determination.***		
48	Adverse effects on honey bee queen viability are not solved by the proposed regulations. ***DPR's proposed regulations are based on an assessment of Tier II colony feeding studies that considered impacts on honey bee queens. The study protocols for these Tier II colony feeding studies were developed collaboratively through the efforts of DPR, U.S. EPA, and PMRA scientists, and in consultation with industry, independent, and university experts. In colony feeding studies, colonies are provided a food source that has been spiked with a known and measured concentration of a specific pesticide and measurements of hive health (i.e., Colony Condition Assessments) are taken at multiple time points prior to, during, and after the exposure period. The parameters examined in these Tier II colony feeding studies include the presence of a queen, queen supersedure or replacement, condition of brood, presence of eggs, and development of larvae and pupae, all of which are measures of queen performance.***	9B	Scientific background
49	Restricting applications to a certain growth phase in blooming plants is not sufficient to protect pollinators. Soil applications are particularly problematic, as several studies indicate that concentrations in pollen and nectar continue to increase over time as the pesticide is continually absorbed from the soil. Limiting application to just before bloom will not prevent exposure. The only way to protect pollinators from adverse effects associated with persistent, systemic insecticides in pollen and nectar is to not use them at all in outdoor settings. ***The residue studies that DPR required registrants to conduct on various crops were used to determine the expected on-field exposure of neonicotinoids to bees. During these residue trials, a crop is treated with a neonicotinoid pesticide during a typical use timing, such as before bloom. Then, pollen/nectar/anther samples are taken from the treated crop during bloom, as it is the time period in which pollinators will visit the crop. These studies were used to determine an appropriate application timing prior to bloom that would not be expected to pose significant adverse effects to bees. For annual***	9D	Scientific background

	crops, the plant is replanted every year, and accumulation is not expected to be a concern. For perennial crops, DPR evaluated multiyear residue studies which accounted for accumulation.		
50	Systemic insecticides like the four nitroguanidine neonicotinoids are absorbed by plants and contaminate soil and groundwater, which often results in chronic, low-level exposure to pollinators. Chronic exposure, even at low levels over time, has been proven to be as dangerous and impactful as acute exposure at high levels. DPR's proposed regulations do not address the danger posed to pollinators through low-level chronic exposure over time. ***DPR is using the most up-to-date risk assessment methodologies for assessing risks to bees and its approach is consistent with other regulatory agencies such as U.S. Environmental Protection Agency. DPR's proposed regulations are based on an assessment of Tier II colony feeding studies that exposed bees to neonicotinoids for 6 weeks. This length of exposure considers effects from chronic exposure, not just acute. Further, the proposed regulations, including reduction of application rates and seasonal rate caps will limit the overall amount of neonicotinoids entering the environment, addressing chronic low-level exposures. See response to comment # 42 regarding DPR's conservative approach to the risk determination.***	9F	Scientific background
51	Risk assessments of the effects of pesticides on honeybees and other pollinators use highly limited methods and periods of time. These methods are inadequate because measuring the effects on bee survival over a few days or simply quantifying the LD50 is not sufficient given the long-term effects of pesticides on bees, particularly honeybees, that live in highly social colonies in which pesticides can accumulate over multiple bee generations. Recent research demonstrated that neonicotinoid pesticide toxicity is time-cumulative, increasing over exposure time, a factor that is not considered in current risk assessments. How will the proposed regulatory action consider the time-cumulative toxicity of neonicotinoids and their environmental persistence?	9H	Scientific background

	DPR's proposed regulations are based on an assessment of Tier II colony feeding studies that exposed bees to neonicotinoids for 6 weeks, not based on LD50 values or effects on bee survival over a few days. In addition, the crop residue studies that DPR's proposed regulations are based on were multi-year residue studies that indicated residues did not accumulate year to year. Thus, DPR's proposed regulations did take into account time-cumulative toxicity and potential increases of exposure over time. See response to comment #42 regarding DPR's conservative approach to the risk determination.		
52	The determination of a safe dose or concentration for pesticides is non-trivial and depends upon multiple factors. The first issue is recognizing that even sublethal and field-realistic doses and exposures can be harmful to honeybees. Will the proposed regulatory action take this research on the negative effects of sublethal doses on bee health into account? ***See responses to comments #42, 50 and 51. DPR's proposed regulations are based on No Observed Effects Concentrations (NOECs) from Tier II colony feeding studies. These toxicity thresholds are levels in which there were no toxic effects noted, and thus do consider sublethal effects. Further, the crop residue studies were conducted at field-realistic application rates and timings.***	9I	Scientific background
53	Agrochemical safety needs to consider multiple adjacent crops because a single honeybee colony can forage over several square kilometers. Research has now demonstrated multiple negative synergistic effects at sublethal agrochemical doses. The combinations of multiple agrochemicals, even at sublethal doses, can be amplified to result in significantly increased bee mortality. Given that colonies can forage over very large distances, how will the proposed regulatory action ensure that a colony, a focal center of food gathering will not be exposed to adjacent crops treated with harmful synergistic compounds? ***See responses to comments #20 and #42 regarding the scope of this rulemaking and DPR's conservative approach to the risk determination.***	9J	Scientific background
54	Bees need to collect water, and honeybees often forage on water that flows through soil because of the higher salt content, which they also need. This increases the risk of bee exposure to agricultural runoff water that may contain pesticides such as imidacloprid. How will the proposed regulatory action consider ground water contamination and bee water foraging? ***See responses to comments #20 and #42 regarding the scope of this rulemaking and DPR's conservative approach to the risk determination.***	9M	Scientific background
55	Pollinators can also be exposed to neonicotinoid pesticides via guttation droplets, which arise from the natural excretion of plant xylem fluids, which, like water, can be attractive to bees, at the margins of leaves. Although some studies have not found conclusive evidence that the collection of guttation water by bees is common, they have only focused on honeybees and under limited environmental conditions.	9N	Scientific background

	Given that the availability of water will strongly control bee water foraging, more research is required. How will the proposed regulatory action take into consideration the high neonicotinoid concentrations in guttation droplets that bees collect? ***In the Risk Determination and Addendum, DPR used the most up-to-date risk assessment methodologies for assessing risks to bees which focuses on risks to bees from contaminated pollen and nectar. Exposure through feeding on contaminated pollen and nectar, represents the two likeliest and consistent routes of exposure to pollinators. While there may be uncertainties associated with other exposure routes, see responses to comments #20 and 42 regarding the scope of this rulemaking and DPR's conservative approach to the risk determination.***		
56	Honeybee studies can be used to predict risks for non-honeybee species. Research demonstrates that multiple native bee species are exposed to pesticides and agrochemicals. How will the proposed regulatory action help to protect these at-risk bee native species from further decline given that they are also exposed to neonicotinoids? ***See responses to comments #12, 20, and 42 regarding protections provided for species beyond honey bees, the scope of this rulemaking, and DPR's conservative approach to the risk determination.***	9O	Scientific background
57	DPR's use of data from crop residue studies combines multiple worst-case assumptions that are unlikely to occur simultaneously in the field (e.g., maximum application rate combined with minimum reapplication intervals over consecutive seasons). The combined effect of these assumptions is to overstate potential risks to pollinators, which compels DPR to propose measures that may be more restrictive than necessary to protect pollinator health. As DPR is aware, effective IPM necessitates a balanced approach to pesticide use restrictions – one that prevents harmful exposures while also preserving grower access to effective pesticides. Failure to strike this critical balance increases the probability of undesirable outcomes, including pest infestations that compromise crop yields and the development of pest resistance to alternative pesticides. Accordingly, we request that DPR work with growers to replace these hypothetical assumptions with more "environmentally realistic exposure conditions" that can actually occur in the field and make corresponding adjustments to the proposed mitigation measures. ***DPR is using the most up-to-date risk assessment methodologies for assessing risks to bees and is consistent with other regulatory agencies such as U.S. Environmental Protection Agency. With any risk assessment, there are uncertainties. DPR has taken a conservative approach to compensate for this uncertainty during the risk mitigation process. While DPR did evaluate worst-case studies, DPR further evaluated residue trials conducted at lower application rates and earlier application timings in***	10D, 17G	Scientific background

	relation to bloom, when the worst-case scenarios presented risk. These additional studies are identified in the 2022 document relied upon titled "Update to the Identification of Crop Residue Studies for Development of Proposed Pollinator Protection Regulations in Response to the Neonicotinoid Reevaluation," which presents all of the final residue studies that DPR relied upon and the 90th percentile residue values. Lower application rates often result in lower amounts of neonicotinoid residues in pollen and nectar, and thus present lower risks to pollinators. Additionally, applications made earlier in the season (in relation to bloom), may allow more time for the residues to dissipate and present lower residues during bloom when the pollinators are expected to visit the crops. If a study conducted based on the worst-case application scenario showed risks to pollinators, DPR then assessed available studies conducted at lower application rates or different timings, to determine if these applications would be lower in risk and could potentially mitigate identified risks. Ultimately, DPR is proposing application rate and timing restrictions for each crop group based on the residue trials that did not exceed the respective NOEC. If all residue trials exceed the respective NOEC, then DPR is proposing to prohibit neonicotinoid applications. See also, responses to comments #1 and 2, above.		
58	The proposal assesses risks posed by residues in crop groups with a focus on honeybee colonies and bloom-time applications, which does not provide the full picture of contamination that pollinators encounter. While considering the cumulative risk from multiple neonicotinoids or multiple application methods on a crop within a growing season is a step forward for understanding the risks these pesticides pose, it does not adequately account for landscape-level risk. Crop-by-crop assessments can provide valuable information to understand risks of specific uses and allow for crop group-specific mitigation, but they cannot be used effectively to mitigate risk across the landscape. Movement across the landscape must be addressed – neither pesticides nor pollinators stay exactly where they are placed, and neonicotinoids are often found near crops where they are applied. Without assessing cumulative risks, it is unclear if crop-specific mitigation proposals even protect honeybees from neonicotinoid exposure. ***See response to comment #42.***	12A	Scientific background
59	We are concerned about the many instances where DPR has prohibited or restricted neonicotinoid applications only when managed pollinators are used in a crop. This leaves our critical wild pollinators exposed to levels of neonicotinoids known to harm honeybee colonies. DPR has stated that it is using *Apis* toxicity data as a surrogate for non-*Apis* bee species, but the proposal negates this approach by requiring mitigation in many instances only when managed pollinators are present. We recommend that these restrictions should be changed to restrict applications whether or not managed pollinators are intended to be used in the crop. ***See response to comment #6.***	12B	Scientific background

60	DPR's focus on crop groups where pollen or nectar residues posed harms to honeybee colonies leaves solitary wild bees and social bumble bees impacted by neonicotinoids even if this mitigation is implemented. While crops that are not pollinator-attractive or are harvested before bloom may not trigger mitigation measures for honeybees, they can still present risk to wild pollinators and managed pollinators that are placed in nearby areas. Excluding crops harvested before bloom doesn't account for other pollinator exposure routes such as soil contact and larval butterfly feeding on host plants. We recommend that DPR incorporate additional mitigation to address the unique risks to these important unmanaged pollinators face. This can be achieved through reviewing toxicity information and relevant endpoints for individual bee exposures, rather than considering levels that harm honeybee colonies. ***See responses to comments #6, 45 and #46.***	12E	Scientific background
61	DPR's rejection of residue studies is not grounded in science and is inconsistent with DPR's own guidance and evaluations. DPR's decision to not consider residue data generated from pollen and nectar samples collected by bees is neither aligned with the approach communicated by DPR throughout the process of protocol and data generation, data review, and risk assessment nor aligned with regulatory authorities around the world including US EPA, Canadian PMRA (USEPA/PMRA/DPR 2014), European Food Safety Authority (SANCO 2002), and Brazilian Institute of Environment and renewable Natural resources (Ham 2020) or the scientific community who support use of bees for collection of samples for residue analysis to support bee risk assessments. ***The "Guidance for Assessing Pesticide Risks to Bees" (U.S. EPA, PMRA, DPR, 2014) states that colony feeding studies, "can incorporate multiple treatment levels of residues in spiked food to obtain a dose response and a No Observed Adverse Effect Concentration (NOAEC) at the colony level for the specific route of dietary exposure (e.g., pollen, nectar, or both) employed in the study." If residues collected from in-hive matrices, bee honey stomachs, or pollen from pollen traps in the colony feeding studies are used to determine toxicity reference values (e.g., NOEC/NOAEC), then the appropriate comparison would be to respective residues from the crop residue studies. However, this was not the case. Therefore, DPR determined the most appropriate comparison is to compare toxicity reference values based on measured residues in spiked nectar solution/pollen patties to exposure reference values collected directly from flowers. In response to this determination, DPR received feedback throughout the regulatory process expressing a need for flexibility in residue collection methods as it can be extremely challenging to collect nectar and pollen directly from the flowers of some plant species in sufficient volumes to enable pesticide residue analysis. In cases where no flower-collected residue data was available for a crop group, DPR made an exception and used bee-collected residue data with a conversion factor to account for the large differences in bee and flower sample collected residues. DPR***	13C	Scientific background

	acknowledges that collecting nectar and pollen directly from flowers can be difficult and has identified legumes (soybean) as a crop group where only bee-collected samples are available. In the only available soybean residue study, efforts were made to collect samples from flowers, but due to flower structure and low amounts of matrices products, bees were utilized to collect samples. Due to the inability to collect residues directly from soybean flowers and that no flower-collected residues are available for the entire crop group, DPR will use the bee honey stomach nectar residues from the only available soybean studies to assess risks for this crop group. See 2022 document relied upon titled "Updated Calculations for Conversion Factor Method to Use Bee-Collected Soybean Nectar Residues in Neonicotinoid Risk Determination" for additional information.		
62	DPR's approach in the proposed regulation deviates from USEPA's approach, in the use of forager bee samples. The use of forager bee-collected samples is critical to a scientifically sound approach. DPR will not consider pollen and nectar residue data if it is collected by forager bees except where hand collection is not possible given the crop physiology. This is contrary to the approach taken by several other agencies. In the external scientific peer review, DPR specifically asked for comment on the Agency's proposal that, "residues in pollen and nectar sampled directly from flowers of plants will be used in characterizing risk to honeybees instead of residues in pollen and nectar sampled from alternative sources." Peer-reviewers provided comments objecting to the scientific credibility of DPR's conclusion. DPR objected to the reviewers' support for sample collection with bees for crops that hand collection is feasible. In response to the reviewers' remarks, DPR communicated that residue collected directly from flowers is the appropriate comparison to the NOAEC obtained from the colony feeding study since the toxicity reference value (NOAEC) obtained from the colony feeding study is based on residues from the spiked food item (pollen patty or sucrose solution) and not in hive matrices. DPR's response is flawed. Forager bees are directly collecting pollen and nectar from flowers and collection of samples directly from the foragers, or from pollen traps at the hive entrance, accurately represents the residues entering the hive while avoiding the contamination of plant tissue in samples which is a high risk of hand collection. The colony feeding study is intended to establish a toxicity threshold for residues entering the hive from foraging bees, so sampling forager bees for comparing field residue studies to the colony feeding study NOAEC is appropriate. ***Samples collected directly from flowers represent the residue concentrations that foraging pollinators are immediately exposed to. DPR assessed available studies with both hand-collected and bee-collected data across different crop groups and determined that the residues from each collection method are not directly comparable (Tafarella. 2020). Pollen and nectar samples that have been processed and handled by bees were determined to not be representative of the colony feeding NOEC concentration which was based on unmanipulated solutions fed directly to colonies. Hand-collected samples were***	13D, 17C	Scientific background

	determined to be both the appropriate data to compare to the spiked food items from the colony feeding study as well as the more conservative sampling method.		
63	Acknowledging that hand collection of nectar and pollen from flowers of some bee attractive crops is not feasible (e.g., soybean), DPR agreed to use nectar residue data obtained by bee collection for the risk determinations of applicable crops after multiplying nectar residues from bee collected samples by an 11x factor. The 11x multiplier DPR developed to "adjust" nectar residues from bee collected samples to a "hand collected equivalent" is scientifically flawed and inconsistent with the risk assessment framework co-developed by DPR. DPR derived the 11x multiplier from a clothianidin residue study (VP-39242, MRID 50154306) – which was rated as "not acceptable for use in this risk determination" by DPR in the 2019 assessment. This approach ignores the reported contamination leading to exaggerated residues in the hand-collected samples from the North Carolina trial. Further, the approach DPR used to derive the 11x multiplier is inconsistent with how the Agency derives the magnitude of residues to be used in risk assessment. To be consistent with the approach DPR uses, in all other cases, for establishing residue values for bee risk assessment, the Agency would calculate the 90th percentile of all, non-contaminated, replicate values for hand and bee-collected samples separately and then calculate the ratio between the approaches. Taking this approach results in a ratio of hand to bee-collected residues that is 2.3x, based on the continuous 90th% residue, which is well within the range of variation expected between plots or trials and not an indication of differences associated with the collection method. In addition, the use of bee collection is aligned with DPR's objective of utilizing a "realistic, yet protective" exposure value for direct comparison to a colony-level toxicity threshold since bee collection inherently addresses the variability of residues across a plot and represents the residues that are entering the hive for a direct comparison to the residues in the spiked pollen and nectar used in the colony feeding studies. ***In response to this comment, DPR reviewed the original study report and confirmed that these samples were contaminated and that the data from these samples should not be included in its method to calculate a nectar conversion factor. Once the contaminated samples were removed, using the same analytical methodology previously employed, DPR's nectar conversion factor to assess risks for legumes changed from 11:1 (flower-collected: bee-collected) to 6:1 (flower-collected: bee-collected). This resulted in a change to the application rate and timing restrictions for crops in the legume vegetable crop group in the text of the proposed regulations. DPR found that thiamethoxam could be applied to legumes up to a maximum application rate of "0.126 pounds of active ingredient per acre per growing season" with a required timing of "apply only from pre-planting until bloom." The proposed regulations were modified in October 2022 to incorporate this change. DPR documented its updated analysis in a September 2022 memorandum titled, "Updated Calculations***	13E	Scientific background

	for Conversion Factor Method to Use Bee-collected Soybean Nectar Residues in Neonicotinoid Risk Determination." This memorandum was added as a document relied upon in support of this revision.		
64	DPR claims to follow the methods established in the 2014 "Guidance for Assessing Risk to Bees" for the neonicotinoid bee reevaluation. However, the approaches defined in the "Guidance for Assessing Risk to Bees" are established on a principle that residues in nectar and pollen scale with application rate. In cases that an application rate under evaluation results in risk level of concern exceedances due to the estimated pollen and nectar residues, the approach built into BeeREX easily accommodates evaluation of sequentially lower application rates for the active substance to define necessary rate reductions. For the neonicotinoid bee reevaluation, DPR broke from this principle, and the approach used for other compounds with less data and associated higher uncertainty, establishing stringent restrictions on the neonicotinoid class that do not leverage the best available science. In cases where the risk level of concern (LOC) was exceeded for a crop or crop group based on a residue monitoring study for an active ingredient, DPR proposes to prohibit use or restrict use to a scenario defined by a monitoring study for an alternative active ingredient in the crop or crop group that did not produce residues that resulted in LOC exceedances. This approach leads to scenarios that DPR's proposed use restrictions for an active ingredient are based on the market-influenced use scenario of a competitor's active ingredient. DPR should instead utilize the principle, accepted by the Agency in other assessments and supported by the residue data, that residues scale with application rate to establish mitigations that align with the necessary application rate reductions to reach an acceptable risk. This alternative approach does not require further DPR resource investment, but rather alignment with EPA's statistical evaluation of neonicotinoid pollen and nectar residue data to establish a concentration in pollen and nectar per amount applied which has already been externally vetted in a public comment process. DPR can use this information to then propose science-based mitigation options. ***The BeeREX model is a Tier I screening-level tool that does not account for effects at the colony-level. The scaling factors used in the Tier I risk estimates are not applied in the Tier II assessment that DPR used in the neonicotinoid evaluation. DPR made risk determinations for the specific rates and timings tested in crop residue trials. DPR did not scale residue data or extrapolate outside of the available crop residue data to make risk determinations for application rates that were not tested. Only a few residue studies are available for each crop group, and there are multiple differences and confounding factors limiting the ability to identify meaningful trends or comparisons between these studies. Ultimately, DPR determined that there is inadequate data to support applying statistical techniques or extrapolating outside of the data set to account for differences in use patterns. Therefore, DPR is proposing application rate and timings that were tested and resulted in measured residues that did not***	13F	Scientific background

	exceed the respective NOEC. Restricting application rates and timings to those that have been tested, and limiting the amount of statistical manipulation of data, ensures a higher degree of certainty in the level of residues to be expected.		
65	DPR's approach in the proposed regulation deviates from USEPA's approach, by not accounting for residue declines. As a part of registration review, DPR required registrants to submit residue monitoring studies following worst-case use conditions and assessed bee risk based on the 90th percentile of maximum residue values from these studies without consideration of residue decline observed in the studies to establish a pre- or post-bloom interval. In cases that the risk threshold (level of concern) was exceeded in the DPR determination based on worst case use conditions, the proposed mitigations prohibit use of the product on that crop or crop group unless a residue monitoring study evaluating a different use pattern is available and passes the risk evaluation. This approach is in contradiction to USEPA established pre- and post-bloom intervals based on the rate of compound decline in pollen and nectar calculated from the submitted residue monitoring studies. DPR's approach to utilization of the submitted residue studies in the development of the proposed regulation also neglects the utility of residue data from alternative use patterns evaluated in some submitted studies, relying only on the worst-case use scenario per study for the risk determination Therefore, DPR is not accounting for the decline, which then reflects an unnecessarily conservative approach and is not reflective of actual potential exposure. ***See response to comment #64.***	13G, 17D	Scientific background
66	The available weight of evidence must be utilized to support proposed mitigation. Unlike DPR, USEPA compiles all residue data across compounds for a crop group and adjusts the data for differences in application rate and application timing in such a manner that residues are estimated on a per rate applied (e.g., lb ai/A) basis and the duration pre/post bloom that is required to be below the colony feeding study NOEC can be calculated. This allows for the use data from available residue studies to determine rates and/or application timings outside of those explicitly tested in the residue studies that are below the level of concern. This approach is scientifically sound because the residue studies were not performed as mitigation trials, but were instead intended to deliver pollen and nectar residue data from worst case label or use conditions. DPR does not take this approach, but rather only considers the 90th% max residue measured in the study to determine if a use has acceptable risk. ***See response to comment #64. DPR found that residue values of neonicotinoids in crops vary according to the application method, and soil and foliar applications resulted in different residue values. DPR did not establish decline curves for each crop group as the 90th percentile value was determined to be a point in the residue distribution where the value represented a realistic, yet protective approach to determining risk.***	17E	Scientific background

67	DPR deviates from U.S. EPA in its use of colony feeding studies and residues in nectar. USEPA only uses the endpoint from the nectar (sucrose) colony feeding study on the basis the results are consistently repeatable and considered "more robust" by USEPA. However, USEPA does account for exposure and potential toxicity through the pollen route by adjusting residues in nectar with a factor that accounts for total exposure via both matrices and toxicity differences between nectar and pollen exposure. This approach is consistent with the Tier I (BeeREX) framework that both USEPA and DPR use. BeeREX estimates the total compound dose from pollen and nectar for an application rate (consistent with the "total food" concept) and then compares the dose to an endpoint derived from a laboratory acute oral toxicity study in which bees are fed a sucrose solution (mimics nectar) spiked with the compound (equivalent to the exposure matrix used in the nectar colony feeding study). Lack of alignment with USEPA in the future would result in inconsistent standards of scientific evaluation that ultimately negatively impacts California agriculture because it will take significant time for the registrants to register a product in California due to additional study requirements and protocols, and the farmers will not have access to new efficacious tools. ***The pollen colony feeding endpoint used by DPR was from colony feeding study that was determined to be acceptable (MRID 50478501). The pollen NOEC derived from this study is a concentration that has been directly tested with honey bee colonies, therefore an adjustment factor was not required for the assessment. Additionally, use of colony feeding studies testing spiked pollen are consistent with guidance from U.S. EPA's Guidance on Exposure and Effects Testing for Assessing Risks to Bees (2016).***	17F	Scientific background
68	DPR's evaluation of lowering application rates is inadequate. DPR utilized the NOAEL from a honeybee colony feeding study to determine a field application rate. It appears to have ignored efficacy data, resistance management, human safety, and even higher tier pollinator studies that may show safe use in the field at the on-label application rates. A NOEAL of concern from a colony feeding study should trigger higher tier field testing with honeybee colonies to confirm that the toxicity would be seen under real world agricultural use conditions. If the concern is still present after higher tier testing, mitigation measures should be discussed on how to prevent exposure to honeybees in the field. Changing an application rate to match a NOAEL of one of the species tested in a pesticide safety data package while ignoring all others, may lead to unknown effects on other species. Furthermore, lowering the application rate most likely will lead to a product that is less efficacious against the pest of interest and could lead to the development of resistance. This may result in farmers applying the product more often to combat growing resistance in pests, which could lead to other unknown effects. Such an outcome would be contrary to DPR's mandate to ensure the safe and efficacious use of pesticides.	17H	Scientific background

	The purpose of the proposed action is to regulate certain production agricultural applications of pesticide products containing neonicotinoid active ingredients for purposes of mitigating risks to bee pollinators. Application rates have not been adjusted to match NOEC values. DPR is proposing application rate and timings that were tested under real field conditions and resulted in measured residues that did not exceed the respective colony feeding NOEC. While there were a few higher tier (Tier III) field studies available, DPR determined that the uncertainties and deficiencies in these studies limited their utility. In comparison, the Tier II studies DPR used as the scientific bases supporting the proposed restrictions are more controlled (while still being sufficiently realistic), and there is greater availability of these studies than Tier III studies.. Therefore, DPR believes that there were sufficient Tier II studies to establish restrictions needed to protect pollinators and that basing the proposed restrictions on a Tier II analysis is a reliable and protective approach.		
69	DPR's estimate of the average annual cost impact to each affected grower ($470) is based on fundamentally flawed assumptions. For example, DPR assumes every farm in the state uses neonicotinoids. Yet if the regulations apply only to eight crop groups, and those crops are a subset of all crops grown in California, then the cost of the proposed regulation will be borne only by the farms producing those crops. It is unreasonable to assume that costs will be spread evenly across every farm in the state when DPR knows NGNs are not used on some crops. ***DPR consulted with CDFA to determine economic impacts on eight focal crops. DPR then extrapolated the economic impacts determine by CDFA in order to cover all affected crops, see 2022 document relied upon titled "Estimated Economic and Fiscal Impact of the Proposed Regulations Mitigating Impacts to Pollinators from Neonicotinoids." For economic impact, DPR estimates that the total annual combined direct plus indirect cost is $30.318 to $33.260 million for California businesses. DPR originally estimated that the total number of businesses impacted by the regulation could be equal to the number of farms in California as reported the United States Department of Agriculture (USDA) National Agricultural Statistics Service's 2017 Census of Agriculture (USDA 2019). The USDA report indicates that about 70,500 farms operated in California during 2017. However, in response to this comment regarding costs per affected grower, DPR consulted with the CDFA to determine the approximate number of Californian farms that have used neonicotinoids in past years. See 2022 additional document relied upon titled "Number of farms using nitroguanidine-substituted neonicotinoid insecticides." CDFA estimates that between 5,900-6,200 farms use neonicotinoid pesticides each year. While not all farms have used neonicotinoid pesticides in previous years, more have the potential to do so in future years. Thus, DPR estimates that the total number of businesses impacted by this regulation ranges between 5,900 -70,500. Accordingly, the average initial and annual cost of compliance with the regulation for each affected grower is estimated at about $470-5,600***	10E	Economic impact

	DPR has amended the Economic and Fiscal Impact Statement (Form 399) to include the range of businesses impacted by these regulations and range of economic impact per business.		
70	DPR's updated economic impact assessment, dated July 2, 2021, includes several caveats that acknowledge uncertainties in its macro and crop-specific economic impact estimates. This report acknowledges that new regulations may change the availability of alternative active ingredients (AIs), citing the cancellation of chlorpyrifos as an example of a change that has already occurred. The report also acknowledges that invasive species and the development of pest resistance may increase the cost of restricting the target neonicotinoids. Failure to quantify the potential impact of these factors biases the total and per-crop estimates toward lower costs, which may lead DPR to erroneous conclusions about which restrictions are feasible and cost-effective. ***CDFA and DPR used the most currently available Pesticide Use Reporting (PUR) data to inform the economic analysis. DPR has seen a general decline in organophosphate use (including chlorpyrifos), and a general increase in neonicotinoid use in the last twenty years, which is reflected in the PUR data. Additionally, CDFA's analysis accounts for the end of all use of nongranular chlorpyrifos by not including chlorpyrifos as an alternative available to growers when switching from neonicotinoids.***	10F	Economic impact
71	Conclusions about "other economic benefits" tied to reductions in pollinator deaths are speculative considering DPR has not presented any information examining other potential causes of pollinator deaths. DPR acknowledges its inability to quantify these benefits, yet still claims them in the ISOR. We recommend that DPR either present peer-reviewed information supporting these claims or remove them from the ISOR. ***In the 2018 risk determination, DPR identified risks to honey bees from uses of neonicotinoids on agricultural crops. DPR's regulatory action will address those risks and is expected to result in a corresponding decrease in agricultural use of neonicotinoids and potential pollinator exposures. Considering the important role honey bees play in the agricultural economy, DPR reasonably expects potential benefits to beekeepers and growers associated with pollinator protections.***	10G	Economic impact
72	The economic assessment does not consider the full impact of neonicotinoid use restrictions in citrus. DPRs economic assessment acknowledges that neonicotinoids, particularly imidacloprid, are an important control option for Asian Citrus psyllid (ACP), the insect vector of Huanglongbing (HLB), and that DPRs proposed restrictions amount to a de facto ban on their use in citrus because the allowable rates would not be efficacious. The economic analysis calculates the costs of DPRs proposed restrictions by calculating the cost of replacing imidacloprid with foliar applications of other insecticides that are only partially effective against ACP. Based on this narrow view, the assessment claims its cost estimates are likely overestimated because growers can petition for emergency approval to use imidacloprid. On page 4 the	13H	Economic impact / Exemption

	assessment states: "For the purposes of estimating pest management costs in this analysis, growers were not assumed to be under a declared emergency, which makes the cost estimate an overestimate to an unknown extent." The analysis is correct that, as currently proposed, growers would be able to petition CDFA for emergency declarations that would allow imidacloprid applications, but it also assumes that emergency controls will be sufficient to prevent established ACP populations and will not create delays that allow ACP populations to grow. The analysis should be revised to include more details on the economic implications of restricting some of the most effective treatments for ACP to "emergency only" uses given the increased risk of ACP populations becoming established once growers lose the ability to implement effective controls on a regular basis. ***In the proposed regulations, DPR provided an exemption to allow applications to control a quarantine pest. The exemption designates that U.S. Department of Agriculture, or the California Department of Food and Agriculture can declare what is considered a "quarantine pest." If a grower needs to control one of the quarantine pests, then a grower can obtain written recommendation from a licensed agricultural pest control adviser to apply neonicotinoid products under this exemption. The operator of the property shall retain the written recommendation for at least two years after the application occurs. CDFA's economic analysis does not state that DPR's restrictions amount to a de facto ban of neonicotinoid use on citrus. To the contrary, the economic analysis acknowledges that neonicotinoids will still be available to treat ACP under the proposed exemption as a quarantine pest. CDFA has already deemed ACP as a quarantine pest; therefore growers with ACP in their field may be able to use this exemption. Petition to CDFA is not necessary for each application.***		
73	The Office of Pest Consultation and Analysis (OPCA) report has several limitations including not including losses due to increased resistance to replacement chemistry. With this in mind, we ask DPR to explain its plans to measure the effectiveness of these regulatory proposals and monitor any impacts on IRM and IPM programs. If significant economic impacts above what was expected occur, will DPR make changes to the proposed regulations to address these impacts? At a minimum, a qualitative but more complete accounting of impact information would help identify priority areas for developing new products and give DPR a fuller picture of the impacts from the regulation. ***As stated in the report, CDFA did not estimate the economic costs of increased pest resistance due to the proposed regulation. The degree to which any specific case of resistance would be impacted by this regulation depends greatly on many factors including how much resistance is currently found to the existing alternatives. DPR accounted for the remaining of use and other uncertainties through***	16F	Economic impact

	extrapolation techniques covered in a memorandum titled "Estimated Economic and Fiscal Impact of the Proposed Regulations Mitigating Impacts to Pollinators from Neonicotinoids" (Clendenin, 2021). DPR then doubled the economic impact to account for indirect costs. DPR estimates that the total combined direct plus indirect cost is $30.318 to $33.260 million for California businesses in a 12-month period. ***Additionally, see response to comment #9 regarding DPR's added exemption as a mechanism to support future changes to these regulations. DPR will continue to monitor the impacts of these regulations and the use of neonicotinoids as part of its program of continuous evaluation.***		
74	Industry has stepped up with a viable solution, the BeeWhere program. It is a live communication website program where you as a Beekeeper and applicator can find out where hives are to avoid accidentally applying pesticide near them during the time the bees are foraging/pollinating. Please consider this program as an alternative to keeping the [A.I.'s] uses in place without further regulations. ***DPR supports and plans to continue to promote improved communication between growers and beekeepers. While improved communication between growers and beekeepers and existing stewardship programs are important, alone they are not sufficient to mitigate risks to pollinators.***	5D	Alternatives to the regulation
75	Language similar to what is currently found in the bee advisory sections of some neonicotinoid products to reduce risk to native pollinators could be added to the proposed regulations. This language would allow use only under certain criteria including: 1) applications done after sunset; 2) applications made when the temperature is below 55 degrees F; 3) a 48-hour notification window to local beekeepers registered within the state apiary system; 4) when the imminent threat of significant crop loss, and documentation consistent with an IPM plan based on an economic threshold, are met. ***Neonicotinoid pesticide labels already include similar label language. These restrictions are intended to have applications occur when bees are not actively foraging. This prevents immediate spray contact risks to pollinators. However, neonicotinoids are systemic pesticides, and the residues are absorbed into plants and distributed throughout the plant and in the pollen and nectar of flowers, which pollinators feed on. The label restrictions do not mitigate risks to pollinators through systemic residues. Thus, additional restrictions are needed.***	16E	Alternatives to the regulation
76	As an alternative to restricting use, DPR should facilitate local solutions. This would include improving communication between growers and area beekeepers. We ask that DPR consider the incorporation of these systems as part of an IPM solution. Promotion and incorporation of existing stewardship efforts including the California-managed pollinator protection plan (MP3), voluntary efforts such as BeeWhere	16H	Alternative to the regulations

	and BeSure!, and the Coalition for Urban Rural Environmental Stewardship (CURES) promoting Best Management Practices (BMPs) can reduce risk in these crops without complete prohibitions. ***See response to comment #74.***		
77	DPR must list all neonic uses as restricted materials because of their risks to bees, widespread contamination of California's environment, and significant risk to birds, fish, and other wildlife. DPR's response to comments fails to justify its proposal not to designate neonics as restricted materials under this standard. Instead, it considers whether restricted material designation is "necessary to protect pollinator health." While this finding is relevant to the reevaluation of neonics under the 2014 Pollinator Law, it does not explain adequately why DPR does not need to designate neonics as restricted materials in light of their broader harms. Moreover, DPR failed to consider the benefits of designating outdoor, non-agricultural neonic products as restricted materials. DPR explained generally that it "did not evaluate risks to indoor uses, structural uses, and non-agricultural outdoor uses such as lawns, gardens and golf courses due to lack of pollinator exposure (i.e., not attractive to bees, no food sources for bees to feed on, lower use rates) or lack of widespread use." This fails to explain why restricted materials designation is not necessary to protect pollinator health. ***See response to comment #20 regarding the scope of this rulemaking. As stated in the ISOR, DPR considered designating neonicotinoid products as restricted materials as an alternative mitigation proposal, but, determined that it was not necessary to achieve the goal of mitigating risk to pollinators identified in the 2018 risk determination. DPR's proposed regulations are designed to fully mitigate the risks identified in the 2018 risk determination. The proposed restrictions are enforceable without site-specific permitting and DPR does not anticipate the need for county agricultural commissioners to establish additional local restrictions pursuant to the restricted material permitting process. Additionally, most agricultural applications of neonicotinoids are already applied by certified applicators. Designating neonicotinoids as restricted materials would unnecessarily result in additional costs, including licensing/certification and permitting costs. As noted above, this alternative is not necessary in addition to the proposed regulations' restrictions to protect pollinator health and thus is not included in the proposed regulations.***	8L	Alternatives to the regulations
78	DPR should consider a set of best management practices that could allow critical uses that fall short of a designated emergency or quarantine situation. These requirements could include the PCA recommendation and record keeping, participation in a stewardship program such as BeeWhere, and adoption of management practices such as those that exist on some labels as bee recommendations. The	16N	Alternatives to the regulations

	scenarios eligible for this pathway could be based on a list of critical crop/pest combinations identified by CDFA, or through a petition to DPR. Similar to the emergency and quarantine exemptions, this provision would also be allowed only in limited circumstances, but would be paired with mitigation measures that minimize potential risks. ***See response to comment #74.***		
79	Support for the changes that DPR made to its initial proposal to harmonize citrus bloom periods with the California state bee protection regulations. These changes will eliminate conflicts within two separate regulations that govern applications during the bloom period or the period immediately after bloom. ***DPR acknowledges this comment.***	3A, 6D	Definitions [Section 6990(a)]
80	The proposed regulation has updated the definition of managed pollinators and clarified that the managed pollinators are to be used for the crops in the field. This new definition more clearly accommodates situations DPR should wish to encourage, such as a farmer allowing bees to be brought onto a property to forage on wild blooming plants and move out before the crop blooms. DPR has also identified the protection of native pollinators as an outcome of these regulations in both the Initial Statement of Reasons and Response to Comments. The conservative protections provided in these regulations address risks to wild as well as managed pollinators and will be protective of both. ***DPR acknowledges this comment.***	16A	Definitions [Section 6990(a)]
81	Support for the clarification DPR made in its definition of bloom to account for the existing regulatory definition of bloom in citrus. This will improve consistency and minimize confusion in compliance. While this change is appreciated, DPR also replaced "from bud break" to "onset of flowering." Bud break is a recognized growth stage so it may be the more recognized agronomic term. We recommend that DPR include this change in terminology in its outreach program to assure that farmers, Ag Commissioners, and others understand and utilize this change in terminology. ***DPR agrees that accounting for the existing regulatory definition of bloom in citrus will improve consistency and minimize confusion in compliance. DPR disagrees that "bud break" is the more recognized term across all crop groups. It was necessary for DPR to choose a term that could be applied consistently across crops to minimize confusion. DPR plans to have outreach to communicate this.***	16J	Definitions [Section 6990(a)]
82	Support for the changes that DPR made to its initial proposal to exempt greenhouse or enclosed nursery applications. Exempting greenhouse or enclosed nursery applications acknowledges that the protection	3B, 6D, 16I	Exemptions [Section 6990(c)]

	provided by greenhouse structures or enclosed nurseries effectively precludes the entry of bees, so they would not be exposed to residues from such applications. ***DPR acknowledges this comment.***		
83	Support and appreciate the exemption provided by DPR for applications made to control quarantine pests with a quarantine declaration by the USDA or CDFA. ***DPR acknowledges this comment.***	3D, 6E, 16M	Exemptions [Section 6990(c)]
84	Request for an exemption from the regulations for the treatment of any pest statutorily regulated by the CDFA Pierce's Disease Control Program or designated by the Pierce's Disease and GWSS. The proposed regulation would hinder the ability of the Program to manage the spread of GWSS, the primary vector for Pierce's disease (PD). The use of neonicotinoids for area-wide treatments to manage high numbers of GWSS has been an integral part of the success of the Program in limiting the spread of PD. ***The proposed regulations already include an exemption to allow applications for the control of quarantine pests. See Section 6990(c)(3) of the proposed regulations. DPR consulted with CDFA and determined that this exemption is sufficient for the purposes of their programs, including the Pierce's Disease Control Program. Thus, additional exemptions specific to these pests/diseases are not necessary.***	4A, T3-A	Exemptions [Section 6990(c)]
85	DPR's Initial Statement of Reasons states that an emergency exemption may be used when "new or invasive pests" are detected. DPR states that this exemption will "allow for quick and efficient eradication efforts to prevent permanent establishment and subsequent spread of invasive pests in California." There is not a clear definition of a "new" or "invasive" pest, and there are additional situations where a "serious economic impact to a crop industry, and/or severe damage to the crop" would occur. We ask that DPR clarify these terms within the regulations. ***These terms are not listed in the text of the proposed regulations and thus defining them in the regulations is not needed.***	16K	Exemptions [Section 6990(c)]
86	DPR should clarify how it expects to incorporate Section 18's approved by the state into its proposed emergency exemption process. The criteria used to justify a Section 18 align with the goals of the provided exemptions and are also subject to additional review by DPR. Based on these factors, we ask DPR to explicitly state that uses allowed under a Section 18 are not subject to the proposed regulation. ***In response to this comment, DPR added an exemption into the proposed regulations to explicitly state that uses allowed under an active Section 18 emergency exemption are not subject to the proposed***	16L	Exemptions [Section 6990(c)]

	regulations. See exemption under section 6990(c)(4). DPR determined that this exemption is necessary to ensure that the proposed regulations will not impact necessary emergency programs under the existing regulations.		
87	According to section 6990.1(b)(1), soil application rate must not exceed 0.2 lbs. ai/A/season. Furthermore, the proposed maximum seasonal application rate of dinotefuran to soil for grapes if managed pollinators will be used during the growing season is 0.2 lbs. ai/A/season. However, the current minimum single application rate to soil for dinotefuran use on grapes is 0.226 lbs. ai/A/application. In both cases, the proposed seasonal application rate is less than the single application rate that is known to be efficacious. In order to comply with DPR requirements, we recommend a maximum seasonal application rate of dinotefuran to soil for grapes at 0.226 lbs ai/A/season if managed pollinators will be used during the growing season. This will result in a seasonal application rate for dinotefuran that is approximately 12% higher than other neonics. However, dinotefuran is generally more than two times less toxic than other neonics. ***See responses to comments #9 and 13. At this time, DPR does not have data to support an application rate of 0.226 lbs ai/A/season for this crop group. If new data becomes available in the future, DPR may review the data.***	1B	Grapes, a crop subject to section 6990.1
88	California's wineries and winegrape growers recognize the importance of maintaining habitats for pollinators. Many vineyards and wineries have installed hedgerows to both increase soil health and provide habitat for pollinators and other beneficial insects. They do this as mindful stewards of the land, not because they are required or rewarded for doing so. Please consider that grapes self-pollinate. Each flower has both male and female reproductive parts, thus don't carry large pollen sources attractive to pollinator species. Consequently, vineyards are not where pollinators typically forage. Additionally, more than 2,400 vineyards participate in the Certified California Sustainable Winegrowing program and all of them monitor for pests as part of an IPM program and all explore low-risk alternatives before applying pesticides and establish buffer zones to protect sensitive areas. These actions help reduce the use of pesticides and benefit pollinator species. Finally, the California Sustainable Winegrowing Alliance (CSWA), a partnership between the Wine Institute and the California Association of Winegrape Growers, has joined the California Pollinator Coalition, which represents a concerted effort by agricultural and conservation organizations working together to conserve California's pollinators. ***DPR supports and plans to continue to promote growers maintaining healthy habitats for pollinators, improved communication between growers and beekeepers, and existing stewardship programs. While***	4B, T3-B	Grapes, a crop subject to section 6990.1

	these existing programs and practices are important, alone they are not sufficient to mitigate risks to pollinators.		
89	The proposed use restrictions are likely to diminish neonic efficacy in grape applications. For example, the requirement to time soil application before budbreak will be ineffective in protecting grape vines from vine mealybug, which necessitates injections during the growing season and soil applications in Spring, often during bloom periods. Restricting the soil application timing to post-bloom is also likely to be ineffective in preventing outbreaks of GWSS that transmit PD. We question the severity of the proposed restrictions, given the consequences of diminished neonicotinoid efficacy and DPR's determination that these crops are only moderately attractive to pollinators and are not expected to provide a significant portion of their diet. ***The restrictions mentioned in this comment are only applicable if managed pollinators will be used in the field. To DPR's knowledge, grape growers don't use managed pollinators in the field, in which case the additional rate and timing restrictions are not applicable.***	10J	Grapes, a crop subject to 6990.1
90	The proposed regulation continues to limit neonicotinoid use in the presence or absence of managed pollinators during bloom. California strawberry varieties are self-pollinating and do not rely on managed or native pollinators for improved yield, quality, or appearance. Strawberries are a poor source of both pollen and nectar for bees compared to other planted and weedy floral sources nearby in California fields and are thus notably less attractive to them. Moreover, the California varieties were specifically developed for efficient yield via wind pollination and are not an important food source for pollinators. In fact, strawberries are not a preferred food source for commercial bees. In this proposed regulation, DPR categorized strawberries as "moderately attractive" to bees with the other berries (i.e., blueberries, raspberries, blackberries) that require managed pollinators. However as noted above, strawberries are the only berry that do not require or use managed pollinators. Despite this, DPR's proposal forces significant restrictions upon the use of imidacloprid and thiamethoxam with insufficient data to support this prohibition. The proposed restrictions do not consider differences in crop attractiveness as well as the use of managed pollinators. Nor do they differentiate among various berries when the use of managed pollinators for production is a significant regulatory factor. Moreover, we continue to be unaware of any documented bee incidents associated with neonicotinoid use on strawberries nor has a query of adverse effects reports to the Environmental Protection Agency ("EPA"), yielded any documented bee incidents in strawberries. Further, existing stewardship mitigation measures (CURES, BeeWhere) for managed pollinators would allow strawberry farmers to continue the use of these products at current label restrictions without impact to pollinators.	14A, 14C	Strawberry, a crop subject to 6990.1

	The current lack of data to support this prohibition calls into question the necessity of the regulation. This is of particular concern given the potential environmental and economic impacts of this regulation. We appreciate that DPR acknowledges that there is insufficient data regarding the attractiveness of strawberries to pollinators for making an appropriate/educated/informed and effective regulation. To fill this data gap the Commission has worked collaboratively with DPR to fund a research project at Cal Poly in San Luis Obispo to evaluate the attractiveness of strawberries to pollinators using current pest management methods. The study is now underway and will provide valuable data by 2023. Given the need for additional economic analysis, we request that the Department remove the restriction for strawberries from the proposed regulation. ***DPR may review new data as it becomes available. However, current data shows that strawberries are attractive to honey bees, native bees, and solitary bees (USDA, 2017). Based on this, it is reasonable to conclude that bees will visit the crops during the bloom period, especially when other food sources are unavailable. While strawberries may not use managed pollinators for pollinating their crops, restrictions are still needed to protect non-managed pollinators. DPR's analysis of residue data found that the use of neonicotinoids in berry and small fruit crops posed high residues at levels that are toxic to bees. Thus, additional mitigation beyond current stewardship programs is needed to protect pollinators. In addition, the fact that berries do not need managed pollinators for pollination is irrelevant to whether they pose a risk to pollinators.*** ***DPR acknowledges that growing practices, such as manual deflowering or petal removal can decrease pollinator attraction. DPR considers the act of deflowering an entire field, to mean the field is no longer in bloom per the definition in the regulation and neonicotinoids could be applied. When the field begins to regrow flowers, the prohibition against applications during bloom will once again apply.*** ***While the regulations do propose to restrict neonicotinoid uses in strawberries, neonicotinoids can still be applied to strawberries in certain situations. Neonicotinoids can be applied during the pre-bloom window, after manual deflowering, or if grown in greenhouses or indoors. Thus, neonicotinoids will still be available to treat critical pests in strawberries and the economic analysis conducted by CDFA reflects that ability.***		
91	There is a lack of alternatives for lygus pest. Lygus bug is considered the highest priority for insect pest management of fresh market strawberry production. Damaged fruit cannot be marketed as fresh fruit and if untreated, the damage will commonly exceed 35% in a typical strawberry field. Lygus is present at damaging levels every year in all California growing districts. As proposed in the regulation, foliar	14B	Strawberry, a crop subject to 6990.1

	treatments with thiamethoxam are prohibited during bloom, a de facto cancelation of this vital tool. With the previous loss of chlorpyrifos and methomyl for strawberries in recent years, the industry experienced an unprecedented increase in pest pressure from lygus. With the additional elimination of the use of thiamethoxam we anticipate a decrease in our farmers' ability to manage lygus and other pests in strawberries. These factors point to additional environmental effects that have not been addressed or considered by the Department in developing this regulation. ***While the regulations do propose to restrict neonicotinoid uses in strawberries, neonicotinoids can still be applied to strawberries in certain situations. DPR expects that neonicotinoids can be applied during the pre-bloom window, after manual deflowering (see response to comment #90), or if grown in greenhouses or indoors.***		
92	Neonicotinoid use in strawberries is low but critical for IPM given the loss of other crop tools. Potential impacts on pollinators from the use of neonicotinoids by strawberry farmers is limited due to the relatively small acreage treated (i.e., about 0.03% of the agricultural land in California). Other factors, including isolation from pollinator habitat and the abundance of non-flowering vegetable crops grown around strawberry fields, further reduce the potential risk to pollinators. The variable use patterns throughout California, limited timeframe of use, and low use rates (lbs/ac) all further reduce the likelihood of pollinator exposure to neonicotinoids in strawberry fields. ***See response to comment # 90.***	14D	Strawberry, a crop subject to 6990.1
93	The economic impact analysis by OPCA does not accurately reflect the economic losses for strawberries. The first report in 2019 reports devastating losses as it measured the impact of the cancelation of all the neonicotinoids noting that the cancellation of imidacloprid and thiamethoxam in strawberries would result in a $1.7 million to $2.1 million increase in insecticide costs. The 2019 report goes on to state that "net revenue losses increase substantially if yields decrease owing to the cancellation of imidacloprid. Using a yield loss estimate based on a single application of alternatives, annual net revenue losses ranged from $73 million (2015, imperfectly elastic demand) to $136.62 million (2017, perfectly elastic demand)." The second report in 2020 concluded that the losses were a little less than $400,000 and estimated only a 30.6% increase in costs with the loss of thiamethoxam. The 2020 report however, assumes imidacloprid use would be allowed, and the estimates did not consider the loss in viable crops due to the inability to control lygus and other pests. As mentioned above, the strawberry industry is already losing approximately $65M - $200M per year due to the cat-facing damage caused by lygus even with the limited use of thiamethoxam. The study "The Economic Impact of *Lygus hesperus* on California Strawberry Production" by Delbridge and Shearer illustrates the financial impact of *lygus* damage as	14E	Economic impact / Strawberry, a crop subject to 6990.1

	\$65M. The financial impact shown in this study is more consistent with what is stated in the 2019 OPCA report. Further, the OPCA reports fail to adequately account for development of cross resistance to pesticides proposed as alternatives to neonicotinoids. This cross resistance, in combination with the new prohibitions from this proposal will result in greater overall pesticide use, which in addition to economic impacts, include a variety of unintended biological impacts, which DPR has not addressed. In addition, non-target pest resistance is not adequately addressed. Fewer available active ingredients for IPM will certainly result in target pests developing resistance in the absence of neonicotinoids. Finally, secondary pest outbreaks could pose a substantial cost to the industry yet are not adequately considered in the OPCA report, other than an assertion that these costs could be substantial and impact resistance development. Most concerning is the assumption that no yield loss is expected as a result of the Proposal. There is no substantiation for this. The 2020 OPCA report does not include losses owing to the more rapid development of resistance to remaining active ingredients by pests and the lack of alternative pest management tools (chlorpyrifos). There are numerous caveats provided on pages six to seven of the executive summary that underscore the inadequacy of the 2020 OPCA report. These caveats invalidate the conclusions. The impact of this regulatory proposal for strawberries demonstrates it is a major regulation requiring a [Standardized Regulatory Impact Assessment] (SRIA). Accordingly, the Department must address all the elements found in Gov Code §11346.3(c)(1) including the creation or elimination of jobs and businesses, the creation of competitive advantages or disadvantages, incentive for innovation, and the benefits to the health, safety, and welfare of California residents. The Department's Economic Impact Statement submitted with the proposed regulation is inadequate and fails to document its validity as a reasonable estimate. More is required by the Department under the Administrative Procedure Act. ***CDFA consults with the University of California and the University of California Cooperative Extension Researchers to determine alternative active ingredients for each target pest and crop. With expert consultation, CDFA determined that there are effective alternative treatments and, as such, there would be no additional losses from lygus due to the restrictions on thiamethoxam. Losses that occur with the current uses of neonicotinoids (prior to proposed regulations) are not accounted for in the analysis, as the analysis focuses on direct impacts and changes that would occur as a result of the regulations.***		

	As stated in the report, CDFA did not estimate the economic costs of increased pest resistance due to the proposed regulations. The degree to which any specific case of resistance would be impacted by this regulation depends greatly on many factors including how much resistance is currently found to the existing alternatives. In the absence of information that enables plausible quantification of an identifiable risk, CDFA did not impose an arbitrary assumption on the magnitude of the expected cost of the realization of uncertainty or on its upper bound. ***CDFA's economic analysis focused on the eight major commodities that would be most affected by the regulations. Those focal commodities account for 89-90% of neonicotinoid use that could be affected by the regulation. DPR accounted for the remaining 11% of use and other uncertainties through extrapolation techniques covered in a memorandum titled "Estimated Economic and Fiscal Impact of the Proposed Regulations Mitigating Impacts to Pollinators from Neonicotinoids" (Clendenin, 2021). DPR then doubled the economic impact to account for indirect costs. DPR estimates that the total combined direct plus indirect cost is $30.318 to $33.260 million for California businesses in a 12-month period. Thus, a SRIA is not necessary***.		
94	Support for the changes made to the draft proposal for crops with a defined bloom period that allows applications of neonicotinoids pre- and post-bloom, there are some inconsistencies in its application across crops. DPR continues to prohibit use after bloom in several crops. Section 6990.1 completely prohibits use in certain crops that use managed pollinators, including in the post-bloom period. DPR should consider allowing use in the post-bloom for crops with a distinct bloom period. These applications are unlikely to pose significant risks to pollinators since the bloom period is over and carryover residues in the next year's crop would be insignificant. ***DPR is proposing application rate and timings that were tested and resulted in measured residues that did not exceed the respective colony feeding NOEC. If post-bloom applications are not permitted for a crop group, this means either that no data for post-bloom applications were available for assessment or that data for post-bloom applications resulted in unacceptable levels of residues the following bloom period.***	16G	Strawberry, a crop subject to section 6990.1
95	Support for the changes that DPR made to its initial proposal to remove the prohibition on the use of multiple neonicotinoid active ingredients in a single season. The removal of the prohibition on the use of multiple neonicotinoid active ingredients in a single season will allow the industry to use the active ingredients that are most effective in controlling multiple quarantine pests. ***DPR acknowledges this comment.***	3C, 6D, 16B	Citrus, crops subject to section 6990.4

96	CDFA's regulations regarding the management of tristeza virus is an example of a treatment that is needed to help assure that trees at the Lindcove Research Center do not become infected with this virus. Preventing infection is important because research conducted on trees that may already be infected would not be valid. Aphids are a vector for the virus after feeding on an infected tree and thereafter moving to healthy trees. Imidacloprid treatments have been the most effective treatment to control aphids and stop the spread of tristeza virus. Under DPR's proposal, citrus growers will be able to use the most effective tools and rates to control a quarantine pest and protect the health of citrus trees including those located at the Lindcove Research Center. ***DPR acknowledges this comment.***	3E	Citrus, crops subject to section 6990.4
97	The proposal will allow growers to use the most effective pesticides at the most effective rates to control ACP, which spreads the Huanglongbing plant disease. This disease threatens the very existence of the citrus industry in California, since it is easily spread by ACP and there is no cure or treatment to save a tree once it is infected. ***DPR acknowledges this comment.***	3F	Citrus, crops subject to section 6990.4
98	For citrus, the current best practices employed by citrus growers do not pose risks to honeybees. Growers take great care to protect pollinators when they are present during bloom and programs such as *BeeWhere* ensure good stewardship and dietary benefits for bees. The maximum application rates of imidacloprid are within the margin of error as to having no observed effects under worst-case scenarios and therefore further rate restrictions should not be necessary. ***Neonicotinoid residues in citrus exceed the NOECs in the Risk Determination and Addendum. Thus, restrictions are necessary to mitigate the identified risks. While DPR supports beekeepers and existing stewardship programs and all efforts to protect pollinators, alone they are not sufficient to mitigate risks to pollinators.***	6C	Citrus, crops subject to section 6990.4
99	The 0.25 lbs maximum rate proposed by DPR for Citrus fruit is not the current application advisable rate for growers. Mandating an application rate reduction by fifty percent (50%) does not provide adequate length of control of the full labeled rate of 0.5 lbs. This significant and inadvisable rate reduction will also have the unintended consequence of increasing multiple tractor-applicator trips through the orchard, thereby potentially increasing worker exposure, increasing exposure to non-target organisms and increasing carbon emissions released into the atmosphere. ***At this time, DPR does not have data to support imidacloprid soil applications at a rate of 0.5 lbs ai/A/season for this crop group. DPR proposed an imidacloprid soil rate of 0.25 lbs ai/A/season,***	13B	Citrus, crops subject to section 6990.4

	because it is the highest application rate for data on file in which DPR has determined is low risk to pollinators. DPR may review new data in the future, should it become available.		
100	A large percentage of tomato growers also farm tree and vine crops that depend on bees for pollination. The tomato itself is not an attractive crop to a foraging bee. Tomatoes are self-pollinated so bee pollination is not used. The concern of these A.I.s being harmful to bees is very low due to the usage patterns in tomatoes. Many ag organizations have done extensive outreach about bees and bee safety over the years as well as numerous University of California Cooperative Extension Farm Advisors & Specialists, along with PCA's ensuring that every applicator understands how the Bees forage, when flight and rest times are so as not to accidently spray their hives or the bees. The County Ag Commissioners have been a huge help to reach all stakeholders. Bee safety is a focus for tomato growers. ***The fact that a crop, such as tomatoes, does not rely on pollinators for pollination does not mean that pollinators will not be attracted to the crop. Tomatoes are attractive to native bees and solitary bees (USDA, 2017). Based on this, it is reasonable to conclude that bees will visit the crops during the bloom period, especially when other food sources are unavailable. While tomatoes may not use managed pollinators for pollinating their crops, restrictions are still needed to protect non-managed pollinators.***	5C	Tomatoes, a crop subject to 6990.6
101	Strong support for any efforts to continue to have access to neonicotinoid active ingredients to utilize in pest and plant pathogen management in California Processing Tomatoes. ***DPR acknowledges the comment. See response to comment #102 below.***	5B	Tomatoes, a crop subject to 6990.6
102	The ability to have access to neonicotinoids is critical in the management of thrips, whiteflies, stinkbugs, and worms in tomatoes and the ability to provide management of the viruses these insects transmit. Access to neonicotinoids will save growers and their pest control advisers precious resources while greatly improving sustainable agriculture in a variety of crops and locations. The previous loss of key active ingredients such as methamidophos and endosulfan to deal with worms, thrips, and stinkbugs has caused neonicotinoids to be used more. The opportunity to have multiple kinds of active ingredients available to slow and potentially stop the resistance of these pests and diseases does make a real difference, both in yield and financially for California tomato producers. 2022 is looking to be a challenge once again in the Southern San Joaquin Valley for the Curly Top Virus. Under the current proposal, foliar applications, and late-season applications to treat beet leafhoppers, western flower thrips, and stinkbugs would not be possible ***While the regulations do propose to restrict uses in tomatoes, neonicotinoids can still be applied to tomatoes in certain situations. DPR expects that neonicotinoids can be applied during a pre-bloom window, after manual deflowering of an entire field, or if grown in greenhouses or indoors.***	5E, 18B, 18G	Tomatoes, a crop subject to 6990.6

103	Disapproval of the DPR Regulation No. 22-001 and appeal to DPR to seek an alternative solution than what has currently been presented for tomatoes. ***DPR has sought several alternatives as discussed in the ISOR under the section titled, "ALTERNATIVES TO THE PROPOSED REGULATORY ACTION." DPR has not identified any feasible alternatives to the proposed regulatory action that would achieve the purpose of the regulations and be less burdensome, including impacts on small businesses, and invites the submission of suggested alternatives. DPR explored four alternative mitigation options when developing this proposed action. Three of the four alternative mitigation options were economically more burdensome, while one was less economically burdensome, but not feasible as it offered less protection for pollinators. DPR determined that the four alternatives were either unnecessary in achieving the purpose of the regulations and compliance with FAC section 12838, or offered significantly less protection for pollinators. DPR ultimately rejected all four alternatives.***	7A	Tomatoes, a crop subject to 6990.6
104	The new proposed limit on neonics will lead to more frequent applications of other chemistries to fill the void. Due to the low rate of A.I. on neonics, this shift will increase total pounds of pesticides applied per acre in tomatoes. The long-lasting systemic nature of neonics substantially reduces the number of passes spraying a field, reducing the opportunities for errors from drift and spills, total pounds of pesticide A.I., diesel, labor, air pollution and carbon footprint, all while increasing efficacy, worker safety, yield and protecting most beneficial insects. ***See response to comment #102.***	7B	Tomatoes, a crop subject to 6990.6
105	As far as groundwater protection is concerned, most tomatoes are grown on low-flow subsurface drip irrigation, and given the value of the water, I don't see any farm owner or manager applying extra hours of water to sufficiently push the products below the effective root zone due to the cost of water today. Doing so would be detrimental to the efficacy of the application and wasteful of a costly input (water). I would also venture to say perhaps some of the deeper-rooted crops may not have the same irrigation intervals as a shallower-rooted annuals like tomatoes. The nature of the tomato crop lends itself to shorter irrigation sets to prevent the many soilborne diseases brought on by too much water and to keep moisture from reaching the top of the bed causing fruit rot. All these limitations naturally cause growers to limit their durations and volumes which intrinsically reduces the opportunities for neonics to pass the root zone. ***The purpose of the proposed action is to regulate certain production agricultural applications of pesticide products containing neonicotinoid active ingredients for purposes of mitigating risks to bee pollinators. Comments related to groundwater protection are outside the scope of the proposed regulations. See response to comment #20 regarding the scope of this rulemaking.***	7D	Tomatoes, a crop subject to 6990.6

106	Pests like consperse stinkbugs are extremely difficult to control once the canopy has reached full bed coverage and older fuming chemistries have had their registration withdrawn, leaving no other effective control products than the three Neonics we use in tomatoes. When soil applied through buried drip or transplant water, the products can travel through the plant to the inner canopy where eggs and stinkbugs are commonly found. Many growers have suffered extensive losses from not applying Dinotefuran late in the season to maintain control of stinkbug nymphs in the canopy prior to harvest. Not having Dinotefuran is the exact reason almost every cannery doesn't grow late season organic tomatoes. All the organic tomatoes are slotted for the front end when pest pressure is lower and before populations of stinkbugs have built up. Once they reach a certain threshold, no organic control methods or pyrethroids on the market today can economically stop them. The issue is penetration into the canopy. ***See response to comment #102.***	7E	Tomatoes, a crop subject to 6990.6
107	Neonics in tomatoes are not the true cause of the bee apocalypse. Please don't make processing tomatoes collateral damage. ***See response to comment #102.***	7F	Tomatoes, a crop subject to 6990.6
108	The proposed maximum seasonal application rate of dinotefuran to soil for fruiting vegetables if managed pollinators will be used during the growing season is 0.172 lbs. ai/A/season. However, the current minimum single application rate to soil for dinotefuran use on fruiting vegetables is 0.226 lbs. ai/A/application. The proposed seasonal application rate is less than the single application rate that is known to be efficacious. To comply with DPR requirements, we recommend a maximum seasonal application rate of dinotefuran to soil for fruiting vegetables at 0.226 lbs ai/A/season if managed pollinators will be used during the growing season. This will result in a seasonal application rate for dinotefuran that is approximately 31% higher than other neonics. However, dinotefuran is generally more than two times less toxic than other neonics. ***See response to comment #87.***	1C	Fruiting vegetables, crops subject to Section 6990.6
109	The financial implications of the proposed rule on growers are substantial. The report prepared by Goodhue et al for DPR on this topic included estimates for costs incurred by growers due to use restrictions for neonic materials. The projected losses include yield reductions and added costs incurred for the use of other replacement crop protection materials. For processing tomatoes, the estimated costs ranged from $4.9 million to $5.6 million. This would equate to about $20 - $25 per acre of processing tomato production. Given the recent rapid rise in fertilizer, fuel, and labor costs adding this new expense would be an unreasonable increase in production costs which would be passed on to the processors and ultimately on to consumers.	2B	Economic/ fruiting vegetables, crops subject to Section 6990.6

	DPR acknowledges the comment and potential impacts on the processing tomato industry but data demonstrates that mitigation measures are necessary to protect pollinator health.		
110	According to a 2015 USDA study, processing tomatoes are unattractive to honeybees as a food source, and current cropping systems do not require bees for pollination. DPR's proposed limitation of treatments to when the crop is not in blossom is not workable. Tomato transplants may blossom shortly after planting and the plants may blossom throughout the season. Limiting the application of neonic products prior to the bloom period would create a very narrow operational window for tomato growers. It should also be noted that if the grower is applying the material via subsurface drip irrigation, an increasingly common practice, it will not come in direct contact with the flowers. ***The fact that a crop, such as tomatoes, does not rely on pollinators for pollination does not mean that pollinators will not be attracted to the crop. Tomatoes are attractive to native bees and solitary bees (USDA, 2017). Based on this, it is reasonable to conclude that bees will visit the crops during the bloom period, especially when other food sources are unavailable. While tomatoes may not use managed pollinators for pollinating their crops, restrictions are still needed to protect non-managed pollinators. Additionally, since neonicotinoids are systemic pesticides, chemigation applications by subsurface drip irrigation are taken up through the roots of the plant and present residues to pollinators when they feed on pollen and nectar.***	2C	Fruiting vegetables, crops subject to Section 6990.6
111	Opposed to DPR restricting the use of neonic products to a maximum of 0.172 lbs. ai/A/season applied prior to bloom. These products are critically important to processing tomato growers, who control multiple season-long pests with these materials. ***DPR acknowledges the comment, but data demonstrates that mitigation measures are necessary to protect pollinator health.***	18A	Tomatoes, a crop subject to Section 6990.6
112	According to the 2015 USDA study, "Attractiveness of Agricultural Crops to Pollinating Bees for the Collection of Nectar and/or Pollen" processing tomatoes (see page 20 under *Lycopersicon esculentum*) are considered by USDA to be unattractive to honeybees as a food source. Further, our cropping system does not require bee pollination and we do not use managed pollinators on any of our acreage. Risk, in this case, must necessarily be built on BOTH residue values and pollinator access and attractiveness to the crop which contains the residue in question. Processing tomatoes, as a cropping system, does not meet these criteria. As processing tomatoes do not use managed pollinators, we would encourage further study into the use of processing tomato fields by native pollinators. Given that no nectar is available, limited pollen is available, and that native pollinators must shake the pollen out of tomato blossoms in a manner which is much less efficient than the gathering of these products from the over 300 weed species which	7C, 18C	Tomatoes, a crop subject to Section 6990.6

	grow on roadsides near tomato fields in California, it is unlikely that tomato fields represent a relevant risk to native pollinators. ***See response to comment #100.***		
113	The loss of options around the use of these tools would result in higher costs, reduced yields, and more frequent applications of less effective products – all a serious setback to the IPM and resistance management programs which processing tomato growers, the researchers we work with at the UC system, and the State have been working so diligently to build over the past 50 years. ***See response to comment #102.***	18D	Tomatoes, a crop subject to Section 6990.6
114	Over 80% of the processing tomato acreage is now irrigated with sub-surface drip irrigation (SSDI). This irrigation is often the delivery mechanism for these products significantly reducing the risk of pollinator exposure. An additional benefit to the use of SSDI over other application types – shorter irrigation run times and decreased volumes intrinsically reduce the opportunities for neonics, or other applied materials, to pass through the root zone and threaten groundwater. ***Neonicotinoids are systemic pesticides, chemigation applications by subsurface drip irrigation are taken up through the roots of the plant and present residues to pollinators when they feed on pollen and nectar. Thus, applications via sub-surface drip irrigation do not mitigate risks to pollinators.***	18E	Tomatoes, a crop subject to Section 6990.6
115	DPR and CDFA have already begun expanding and formalizing improved communication processes between growers, applicators, PCAs and beekeepers. Both the "Bee Safe" and "BeeWhere" programs are designed to protect honeybees and improve bee health. Our growers work with beekeepers in their areas to utilize these programs and to minimize harm to pollinators when these materials are used. Processing tomato growers are committed to the success of these programs. Although it is unlikely due to the preference of native pollinators to readily accessible weed species which are found along field edges over the pollen which is in low volume and difficult to obtain from tomato flowers, if the concern is for these [native] species we would invite DPR to engage with our membership around the creation of beneficial habitat. ***See response to comment #88.***	18F	Tomatoes, a crop subject to Section 6990.6
116	We would propose that DPR allow for the use of similar safeguards afforded other pesticides in order to allow for the safe use of these effective neonicotinoid products. A Section 18 label for sulfoxaflor used on cotton (issued in 2017/2018) included language instructions to apply during certain time periods in the day (after dusk) or below certain temperatures. Additionally, the label also included instructions to notify beekeepers within a certain radius. The cotton industry would encourage DPR to provide flexibility to	11A	Cotton, a crop subject to Section 6990.10

	allow the use of neonicotinoids on indeterminant blooming crops if these safeguards can effectively be put in place. The cotton industry feels strongly this can be done easily and effectively and has the track record to prove it. If this language were to be instituted for neonicotinoids, it would ensure consistent safeguards are being applied equally and effectively. ***Neonicotinoid pesticide labels already include similar label language. These restrictions limit applications to times when bees are not actively foraging. This prevents immediate spray contact risks to pollinators. However, neonicotinoids are systemic pesticides, and the residues are absorbed into plants and distributed throughout the plant and in the pollen and nectar of flowers, which pollinators feed on. The label restrictions do not mitigate risks to pollinators through systemic residues. Thus, additional restrictions are needed.***		