Department of Pesticide Regulation

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California Notice 2019-04

SEMIANNUAL REPORT SUMMARIZING THE REEVALUATION STATUS OF PESTICIDE PRODUCTS DURING THE PERIOD OF July 1, 2018 THROUGH December 31, 2018

California regulations require the Department of Pesticide Regulation (DPR) to investigate reports of possible adverse effects to people or the environment resulting from the use of pesticides. Reevaluation of a registered pesticide is required if a significant adverse impact occurred, or is likely to occur, from its use.

Title 3 of the California Code of Regulations (3 CCR) section 6221, specifies several factors under which DPR may initiate a reevaluation: (a) public or worker health hazard, (b) environmental contamination, (c) residue over tolerance, (d) fish or wildlife hazard, (e) lack of efficacy, (f) undesirable phytotoxicity, (g) hazardous packaging, (h) inadequate labeling, (i) disruption of the implementation or conduct of pest management, (j) other information suggesting a significant adverse effect, (k) availability of an effective and feasible alternative material or procedure that is demonstrably less destructive to the environment, and (l) discovery that data upon which a registration was issued is false, misleading, or incomplete. Often, an ongoing DPR pesticide review triggers a reevaluation. Reevaluation triggers also include data or information received from state and county pesticide use surveillance and illness investigations, pesticide residue sample analyses, environmental monitoring activities, and issues that may concern other state or federal agencies.

When a pesticide enters the reevaluation process, DPR reviews existing data and may require that registrants provide additional data to characterize the nature and extent of the potential hazard and identify appropriate mitigation measures if needed.

DPR concludes reevaluations in a number of different ways. If the data demonstrates use of the pesticide presents no significant adverse effects, DPR concludes the reevaluation without additional mitigation measures. If additional mitigation measures are necessary, DPR will place appropriate restrictions on the use of the pesticide to mitigate the potential adverse effect. If the adverse impact cannot be mitigated, DPR cancels or suspends the registration of the pesticide product.

This report complies with the requirement of 3 CCR section 6225, which requires DPR to prepare a semiannual report describing pesticides reevaluated, under reevaluation, or for which factual or scientific information was received, but no reevaluation was initiated. The report contains two sections:

I. *Formal Reevaluations*--initiated when an investigation indicates a significant adverse impact has occurred or is likely to occur (see page 2); and,
II. *Preliminary Investigations (Evaluations)*--initiated when DPR receives possible adverse impact data or information resulting from the use of a product and/or active ingredient, but no formal reevaluation has been initiated (see page 10).

CALIFORNIA NOTICE 2018-01

California Notice 2018-01, titled Expanding Use of Pesticide Products under Reevaluation, was issued on January 3, 2018. In accordance with this notice, DPR will not act upon an Application for Pesticide Registration or Application to Amend Pesticide Products if relevant to the concern that prompted the reevaluation. The notice affects new products, supplemental distributor registrations, amendments, Special Local Needs, and Experimental Use Permits. DPR will evaluate Emergency Exemption requests on a case-by-case basis if a pest management or public health need arises. When DPR completes the reevaluation, DPR will be able to, in light of the reevaluation determination, consider the Application for Pesticide Registration or Application to Amend Pesticide Products.

To view the notice, please visit DPR's Web page at <https://www.cdpr.ca.gov/docs/registration/canot/camenu.htm>.

FORMAL REEVALUATION

DPR initiates formal reevaluation when an investigation indicates a significant adverse impact has occurred or is likely to occur. Each reevaluation is summarized with regard to the following four areas: (1) *Basis and Scope*, (2) *Data Requirements* (if any),
(3) *Summary* (e.g., protocol development, study/data submission and evaluation, DPR analysis papers, risk assessments), and (4) *Mitigation Efforts and Status*.

CHLOROPICRIN – 32 Products

Basis and Scope: On October 16, 2001, DPR placed pesticide products containing the active ingredient chloropicrin into reevaluation. The reevaluation is based on air monitoring data, which found that air concentrations at some distances from treated greenhouses, exceeded the National Institute for Occupational Safety and Health's reference exposure limit and the Occupational Safety and Health Administration's permissible exposure limit of 100 parts per billion (ppb) averaged over an eight-hour period. In addition, DPR found that data submitted under the Birth Defect Prevention Act indicated chloropicrin has the potential to cause adverse health effects at low doses.

Data Requirements: Under this reevaluation, DPR required registrants of pesticide products containing the active ingredient chloropicrin to conduct and submit data on various worker exposure and air quality monitoring studies from field and greenhouse applications. In August 2005, DPR completed its review of the required monitoring data and began work on a risk assessment of chloropicrin uses as part of the reevaluation process to mitigate potential adverse effects at low concentrations. In January 2015, DPR notified chloropicrin registrants of a new data requirement to determine if chronic exposure to chloropicrin presents a carcinogenic hazard requiring mitigation. In July 2015, DPR established a mechanistic study data requirement for the scientific assessment of the carcinogenic hazard of chloropicrin based on evaluation of submitted and other available data and information.

Summary: In February 2010, DPR completed a risk characterization document (RCD) for chloropicrin as a toxic air contaminant (TAC). The RCD analyzed the risks associated with potential exposures to residents and bystanders from ambient and offsite air concentrations of agricultural use chloropicrin products. The Scientific Review Panel completed its peer review of the document in April 2010 and in December 2010 DPR filed a regulation listing chloropicrin as a TAC. In December 2010, based on the TAC risk assessment, DPR issued a risk management directive (RMD) to address resident and bystander exposures identified by the TAC evaluation. This RMD determined that the appropriate regulatory target level to restrict acute exposure to chloropicrin is 73 ppb averaged over an eight-hour period. Chloropicrin was designated as a TAC effective January 8, 2011 and DPR initiated development of use restrictions following TAC procedures specified in state law. On November 14, 2012, DPR completed its comprehensive RCD for chloropicrin, which includes dietary and occupational exposure scenarios.

On July 24, 2015, DPR established a new mechanistic data requirement to attain more information on the potential carcinogenicity of chloropicrin. On several occasions, the Chloropicrin Manufacturers' Task Force (CMTF), on behalf of chloropicrin registrants, met with DPR to discuss technical elements, methodology, and study protocol. In June 2016, DPR accepted the CMTF protocol for the mechanistic study titled, *Identification of mouse lung target cell type and target respiratory region for effects following nose-only inhalation exposure to chloropicrin vapor.* In December 2016, DPR met with CMTF to discuss an extension request, additional information request, study timeline, logistics, and technical challenges. In March

2017, CMTF provided additional information and an update on the initiation of the study. In April 2017, CMTF provided a progress report. On May 1, 2017, DPR granted CMTF's extension request and established a new final study submission date along with required submissions of regular interim reports.

CMTF submitted the required quarterly interim reports in January, May, August and December of 2018. DPR scientists evaluated the reports and reiterated the required final study submission date.

Mitigation Efforts and Status: During this reevaluation, the U.S. EPA developed label mitigation measures under its Reregistration Eligibility Decision (RED) for products containing chloropicrin. These soil fumigant label measures require users to prepare site-specific Fumigant Management Plans and are intended to mitigate unacceptable exposures to workers, residents, and bystanders. The measures were implemented in two phases and went into effect on December 31, 2010 and December 1, 2012. The measures added more restrictions, prohibitions, human health protection language, and information on the product label. DPR completed its fumigant label reviews and DPR continues to monitor new and amended pesticide product registrations to ensure labeling compliance.

In May 2013, DPR proposed mitigation measures designed to protect bystanders and residents from acute exposures to chloropicrin for public comment. DPR developed these mitigation measures using U.S. EPA's label changes as the foundation for mitigating offsite exposures. DPR proposed additional restrictions beyond labeling and regulation to protect residents and bystanders including additional buffer zones, restriction on buffer zone credits, acreage limits, time periods between applications with overlapping buffer zones, emergency preparedness and response, and notice of intent requirements. DPR developed the proposed mitigation measures in consultation with the California Air Resources Board, the air pollution control districts, and the county agricultural commissioners, as required by California Food and Agricultural Code (FAC) section 14024(a). In addition to consulting with state and local agencies required by law, DPR also discussed early mitigation concepts with worker advocate groups and registrants. DPR also submitted its initial technical analysis for scientific peer review. DPR received and responded to comments from several thousand people and three external scientific peer reviewers.

In early January 2015, DPR posted "Control Measures for Chloropicrin: Control of Resident and Bystander Acute Exposure from Soil Fumigation Applications." The controls are intended to reduce risk from acute exposures to residents and bystanders that might occur near fields fumigated with products containing chloropicrin. On January 16, 2015, DPR presented the chloropicrin mitigation measures to the Pesticide Registration and Evaluation Committee and members of the public. On April 6, 2015, DPR issued interim recommended restricted material permit conditions for field fumigants containing chloropicrin. In February 2017, DPR issued revised interim permit conditions developed to mitigate hazards of offsite movement of field fumigation applications of chloropicrin. More information on human health risk assessment and

mitigation for chloropicrin is available on DPR's Web site at <http://www.cdpr.ca.gov/docs/whs/active_ingredient/chloropicrin.htm>.

For more information on the reevaluation for chloropicrin, please visit DPR's Reevaluation Web page at <http://www.cdpr.ca.gov/docs/registration/reevaluation/chemicals/chloropicrin.htm>.

CYFLUTHRIN – 34 Products

Basis and Scope: On May 5, 1998, DPR placed pesticide products containing the active ingredient cyfluthrin into reevaluation. The reevaluation is based on DPR's investigations of a May 1997 respiratory irritation outbreak reported among orange harvesters exposed to cyfluthrin residues and other related pesticide illness reports. As part of the investigation, DPR's Worker Health and Safety Branch conducted two separate inhalation-monitoring studies in orange groves during orange harvest. As dust and pollen are a part of the normal working environment, DPR determined that additional variables in the work environment led to the workers' respiratory irritation symptoms experienced. DPR compiled the results in its monitoring study titled, *Health and Safety Report HS – 1765,* which found probability that cyfluthrin, applied close to harvest, led to the symptoms experienced.

Data Requirements: Under this reevaluation, DPR required registrants of pesticide products containing the active ingredient cyfluthrin to provide (1) respiratory irritation study, (2) worker exposure study, and (3) monitoring data for structural application. In October 2001, the primary manufacturer submitted two worker exposure studies regarding hand harvesting of oranges and sweet corn, four indoor exposures studies, and a study titled, *Study on the RD_{50} Determination in Rats*. Based on this data, DPR determined structural monitoring data was no longer required. However, during the course of this reevaluation, DPR determined it had insufficient data regarding worker exposure during the hand harvesting of sweet corn. As a result, in February 2002, DPR required a worker exposure study be conducted during the harvesting of sweet corn. The results of the study were submitted to DPR in October 2004.

Summary: In 2006, DPR determined a comprehensive exposure assessment is necessary for cyfluthrin. In September 2008, DPR completed an Exposure Scoping Document for cyfluthrin intended to lay the groundwork for the risk assessment process. DPR completed review of cyfluthrin sweet corn hand harvester studies and the reevaluation is pending further assessment of the potential risks associated with the use of cyfluthrin. In August 2015, an update to DPR's Summary of Toxicology Data document for chronic health effects on cyfluthrin was completed.

Mitigation Efforts and Status: On January 30, 2018, the problem formulation document was posted to DPR's Web site. In February 2018, DPR presented the problem formulation document and initiation of the risk assessment for cyfluthrin to the Pesticide Registration and Evaluation Committee. Additionally, U.S. EPA's registration review of cyfluthrin is currently in progress. DPR will collaborate with U.S. EPA on the risk assessment, where possible. DPR's Human

Health Assessment Branch plans to release a draft RCD in 2019. If DPR's risk characterization concludes that use of cyfluthrin poses a risk to workers, DPR will proceed with mitigation. More information on the human health risk assessment for cyfluthrin and additional resources are available on DPR's Web site at <http://www.cdpr.ca.gov/docs/whs/active_ingredient/cyfluthrin.htm>.

For more information on the reevaluation for cyfluthrin, please visit DPR's Reevaluation Web page at <http://www.cdpr.ca.gov/docs/registration/reevaluation/chemicals/cyfluthrin.htm>.

NEONICOTINOIDS (NITROGUANIDINE INSECTICIDES) – 276 Products

Basis and Scope: On February 27, 2009, DPR placed certain pesticide products containing the active ingredients imidacloprid, thiamethoxam, clothianidin, and dinotefuran into reevaluation. The reevaluation is based on an adverse effects disclosure involving the active ingredient imidacloprid. DPR's evaluation of the adverse effects data noted two critical findings: (1) high levels of imidacloprid in leaves; and, (2) blossoms of treated plants and increases in residue levels over time. Thiamethoxam, dinotefuran, and clothianidin are in the same chemical family as imidacloprid, known as the nitroguanidine insecticide class of neonicotinoids, and have similar properties and characteristics (e.g., soil mobility, half-lives, and toxicity to honey bees).

Data Requirements: Under this reevaluation, DPR required registrants of pesticide products containing the active ingredients, imidacloprid, thiamethoxam, clothianidin, and dinotefuran to provide the following data for each active ingredient: (1) LC_{50} (acute), categorized as a Tier I study, on honey bees starting at the larval stage through emergence; and, (2) field-based residue studies in pollen, nectar, and leaves from specific agricultural orchard and row crops. For field-based residue data requirements, DPR's Pesticide Use Reporting database was used to determine the crops of focus for each active ingredient. During the course of this reevaluation, initial field residue data provided were found to be inconclusive and did not involve "worst-case" scenarios i.e., a residue study conducted at the permitted California maximum application rate and the minimum reapplication interval. DPR modified its residue study strategy to require controlled applications at the highest maximum application rate per year for two consecutive years. For certain commodities, DPR required these two-year prescriptive residue studies of imidacloprid, thiamethoxam, clothianidin, and dinotefuran registrants.

Additionally, U.S. EPA requires higher tier honey bee toxicity studies and additional field-based residue studies for their reevaluation of neonicotinoids, which are shared with DPR and the Pest Regulatory Management Agency (PMRA) Health Canada. A Tier II study, or a feeding study, exposes bee colonies to known concentrations of a pesticide and examines the chronic effect. A Tier III study, or full field study, is a field-level study that looks at long-term effects under environmentally realistic exposure conditions. DPR continues to receive Tier I, Tier II and Tier III studies for the active ingredients imidacloprid, thiamethoxam, clothianidin, and dinotefuran.

Summary (by Active Ingredient):

Imidacloprid: DPR notified registrants of products containing the active ingredient imidacloprid of the LC_{50} and field residue study data requirements. DPR required residue data on the following eight commodities: almonds, citrus, cotton, cucurbits, fruiting vegetables, pome fruit, strawberries, and later required stone fruits. Rather than conduct a residue study for almonds, imidacloprid registrants removed use on almonds from their labels.

In April 2010, the primary manufacturer submitted draft residue study protocols for cotton, melons, tomatoes, apples, and strawberries. DPR, U.S. EPA, and PMRA Health Canada reviewed the draft protocols. In May 2011, DPR received final reports from residue studies conducted on citrus, cotton, and tomato. In March 2012, DPR provided a review of the submitted reports and found both the cotton and tomato studies to be unacceptable because they did not represent worst-case scenarios. As a result, DPR expanded the crops required to include stone fruit and required two-year prescriptive residue studies representing worst-case scenarios for cotton, tomatoes, pome fruit, and stone fruit.

In March 2012, DPR received a final report on chronic toxicity effects to larval honey bees. In April 2012, the primary manufacturer submitted additional studies on citrus. In May 2012, DPR reviewed and accepted four two-year prescriptive residue study protocols for cotton, tomato, apple, and cherry. In December 2012, DPR received final reports on strawberry and melon. In June 2014, DPR received revised interim reports on cotton and tomato. In November 2014, DPR received interim reports on apple and cherry. In December 2014, DPR received a final report on chronic toxicity effects to adult honey bees and received U.S. EPA required residue data on blueberry, citrus, corn, cotton, stone fruit, and on rotational white clover used as forage. In June 2015, DPR received a final report on cotton and a progress report on tomatoes. In January and April 2016, DPR received final reports on cotton, tomatoes, apples, and cherries. In March and July 2017, DPR received U.S. EPA required full field data on cotton and pumpkins.

Thiamethoxam: DPR notified registrants of products containing the active ingredient thiamethoxam of the LC_{50} and field residue study data requirements. DPR required residue data on the following eight commodities: almonds, citrus, cotton, cucurbits, fruiting vegetables, pome fruit, strawberries, and stone fruit. In February 2013, rather than conduct a residue study on almonds, thiamethoxam registrants removed almond use from their labels.

The primary manufacturer submitted draft protocols for residue studies in melons, tomatoes, and apples, which were reviewed by DPR, U.S. EPA, and PMRA Health Canada. In March 2011, the primary manufacturer requested a waiver for the residue study requirement on pome fruit and strawberries due to limited California field applications of thiamethoxam in 2009 and 2010. DPR granted a waiver for the residue study on pome fruit. In January 2012, the primary manufacturer submitted final reports for tomatoes and acute toxicity effects to larval honey bees.

In October 2012, DPR expanded the required crops to include almond, citrus, cotton, and stone fruit. In addition, DPR required two-year prescriptive residue studies for strawberry, almond, citrus, cotton, and stone fruit. Rather than conduct a residue study for almonds, thiamethoxam registrants removed use on almonds from their labels. In January 2013, DPR received a final report on cucumbers, and final protocols on citrus, cotton, and stone fruits (cherry, peach, and plum). In September 2014, DPR received interim reports on citrus and cotton. In July 2015, DPR received a final report on cotton. In October 2015, DPR received an interim report on strawberry. In December 2015, DPR received a final report on cotton, stone fruit (cherry, peach, and plum), and received U.S. EPA required reside data on cranberry, cucumber, pepper, tomato, and soybean treated seed. In March 2016, DPR received a final report on a voluntary orange study and U.S. EPA required residue data on citrus. In March and July 2017, DPR received a final report on citrus, strawberry, and U.S. EPA required residue data on tomato, pumpkin, melon, corn, and apple. In November 2017, DPR received a final report on chronic toxicity effects to adult honey bees, an amended final report on cotton, and U.S. EPA required residue data on sweet orange and blueberry. In April 2018, DPR received amended U.S. EPA required residue data on citrus.

Clothianidin: DPR notified registrants of products containing the active ingredient clothianidin of the LC_{50} and field residue study data requirements. DPR required residue data on the following five commodities: almonds, cucurbits, fruiting vegetables, pome fruit, and stone fruits. In November 2009, the clothianidin primary manufacturer requested a waiver due to limited use in California. DPR granted a waiver for the residue study on pome fruit. In January and April 2011, the primary manufacturer submitted an acute larval toxicity study protocol and a proposed residue study draft protocol on cucurbits (pumpkins). In February 2012, the primary manufacturer submitted a final report on chronic toxicity effects to larval honey bees.

In May 2013, DPR required two-year prescriptive residue studies for almond, cucurbit, fruiting vegetable, and stone fruit. In May 2013, DPR received an interim report on pumpkins. In August 2013, the primary manufacturer submitted a combined orchard protocol (almond, pome, and stone fruit) to address U.S. EPA, PMRA Health Canada, and DPR's reevaluations. In March 2014, DPR received an interim report on pumpkins. In October 2015, DPR received an interim residue report on almond, a final residue report on cotton, and U.S. EPA required interim residue data on apple. In April and May 2015, DPR received a final report on pumpkins and U.S. EPA required residue data on citrus and cucurbits. In lieu of conducting the residue studies on fruiting vegetables, clothianidin registrants removed fruiting vegetables from their labels. From March to July 2016, DPR received U.S. EPA required residue data on cotton, pumpkin, potato, and additional cucurbit and citrus. In February 2017, DPR received a final residue study report on almonds, a final report on chronic toxicity effects to adult honey bees and received U.S. EPA required residue data on corn, grapevines, apples, and melon. From March 2017 to March 2018, DPR received additional final reports on chronic toxicity effects to adult honey bees and submissions of U.S. EPA required residue studies on soybean treated seed, peach, and additional corn, and citrus.

Dinotefuran: DPR notified registrants of products containing dinotefuran of the LC_{50} and field residue study data requirements. DPR required residue data on the following three commodities: cotton, cucurbits, and fruiting vegetables. In response, the primary manufacturer submitted data and information, including limited use data, for DPR review and consideration.

In March 2012, the primary manufacturer provided DPR with reports evaluating foraging honey bees and hives after exposure to dinotefuran, and acute toxicity effects to honey bee data. In January 2014, the registrant submitted a protocol to conduct an acute larval toxicity study. In January 2015, DPR jointly reviewed residue protocols required by U.S. EPA for potato, tomato, pumpkin, cucumber, cherry, cotton, and cranberry. In October 2015, DPR received a final report on acute larval toxicity effects to honey bees. During the report period, DPR received residue study final reports on cucurbits (cucumber) and fruiting vegetables (tomatoes). In February and March 2016, DPR received U.S. EPA required residue data on potato, pumpkin, cherry, and cranberry. In February 2017, DPR received a final residue study report on cotton, chronic toxicity effects to adult honey bees, and U.S. EPA required residue data on stone fruit, bell pepper, cucurbit, cantaloupe, and blueberry.

Multi-Agency Collaboration: On June 20, 2014, a Presidential Memorandum creating a federal strategy to promote the health of honey bees and other pollinators was signed. In June 2014, DPR, U.S. EPA, and PMRA Health Canada completed a collaborative document titled, *Guidance for Assessing Pesticide Risks to Bees*. The document is posted on U.S. EPA's Pollinator Protection Web site at <http://www2.epa.gov/pollinator-protection>.

On January 6, 2016, U.S. EPA released a preliminary pollinator risk assessment for imidacloprid, which was a collaborative effort between PMRA Health Canada, DPR, and U.S. EPA. On January 12, 2017, U.S. EPA posted the preliminary pollinator risk assessments for thiamethoxam, clothianidin, and dinotefuran. DPR will continue to work closely with its partners to investigate all available sources of bee attractive residue and honey bee effects data that may be scientifically meaningful to the reevaluation.

Mitigation Efforts and Status: In April 2010 and December 2012, imidacloprid and thiamethoxam registrants, respectively, agreed to remove use on almonds from all product labels in California. DPR considers this an important mitigation step in pollinator protection since almond orchards require a large number of pollinators.

On August 15, 2013, U.S. EPA notified registrants of neonicotinoids of new labeling requirements for all formulations having outdoor foliar use directions (except granular products). This required registrants to include prescribed bee protective language on their product labels by the 2014 agricultural use season for existing and new product registrations. In November 2013, DPR required registrants to submit amended labels to California shortly after U.S. EPA acceptance. DPR has completed its pollinator label review and DPR continues to monitor new and amended product registrations to ensure labeling compliance. Improved pollinator protective labels are currently in the California marketplace.

In July 2018, DPR submitted the California Neonicotinoid Risk Determination to the State Legislature in accordance with FAC section 12838. The risk determination report is a refined Tier II assessment built off U.S. EPA's preliminary pollinator risk assessments and includes additional data that DPR received after the preliminary pollinator risk assessments were issued. The report compares colony feeding study values to worst-case scenario residue values to determine risks to honey bees. In accordance with FAC section 12838, DPR must adopt necessary control measures to protect pollinator health within two years of the determination report being issued. Within the two-year period, DPR will continue reviewing data and consulting with experts and other stakeholders to help inform mitigation decisions. Additionally, U.S. EPA is scheduled to issue their final pollinator risk assessments for the four compounds in the spring of 2019, which may also contain useful information for mitigation. In September 2018, DPR presented the risk determination report and the next steps in FAC section 12838 at the Pesticide Registration and Evaluation Committee meeting.

For more information on the reevaluation for neonicotinoids, please visit the following Web page at <http://www.cdpr.ca.gov/docs/registration/reevaluation/chemicals/neonicotinoids.htm>.

PRELIMINARY INVESTIGATIONS (EVALUATIONS)

DPR conducts preliminary investigations of products (and active ingredients) for which the department, or other State or county agencies, have identified possible hazards. As a result of evaluation, the investigation may lead to formal reevaluation.

FIRST-GENERATION ANTICOAGULANT RODENTICIDES (FGARs) – 74 Products

Basis and Scope: First-generation anticoagulant rodenticide (FGAR) products contain the active ingredients warfarin, diphacinone, and chlorophacinone. DPR conducted a preliminary investigation of studies and data submitted to DPR regarding potential adverse impacts to non-target wildlife from use of FGARs and published a summary of its investigation on November 16, 2018.

For FGARs, DPR's preliminary investigation found the rate of FGAR exposure among non-target wildlife is generally decreasing and is lower than SGARs. Further, the chemical characteristics of FGARs (toxicity, persistence, and bioaccumulation) are such that any exposure would be less significant than exposure to SGARs. Due to their lower toxicity, FGARs require multiple doses before producing a lethal effect and so, unlike SGARs, are not likely to result in the accumulation of a concentration above the lethal dose in the body of the target pest. The Director found insufficient information to justify reevaluation of FGARS as data currently on file with DPR does not provide a basis for placement into reevaluation.

SECOND-GENERATION ANTICOAGULANT RODENTICIDES (SGARs) – 75 Products

Basis and Scope: Second-generation anticoagulant rodenticide (SGAR) products contain the active ingredients brodifacoum, bromadiolone, difenacoum, and difethialone. DPR conducted a preliminary investigation of incident data and public literature submitted by CDFW and other sources on anticoagulant rodenticides and prepared a report on its findings.

For SGARs, DPR's preliminary investigation determined that while the 2014 regulations changed SGAR use patterns by restricting their purchase, sale, and use, reported rates of non-target wildlife exposure to SGARs have not decreased. Additionally, the investigation found evidence of possible population-level impacts among non-target wildlife in California due to statistically significant associations with SGAR exposure and sublethal impacts. The investigation indicates that non-target wildlife exposure may be significant due to the chemical characteristics of SGARs, which are known to have properties of high toxicity, persistence, and bioaccumulation. The investigation also notes that brodifacoum has relatively higher rates of exposure among non-target wildlife as compared to other SGARs.

Based on the preliminary investigation, the Director finds that a significant adverse impact has occurred or is likely to occur from the use of SGARs and proposes to begin reevaluation. On November 16, 2018, DPR issued its proposed decision to begin reevaluation for SGAR products containing the active ingredients brodifacoum, bromadiolone, difenacoum, and difethialone. The comment period closes Wednesday, January 16, 2019.

For more information on this proposed reevaluation, please visit the following Web page: <http://www.cdpr.ca.gov/docs/registration/reevaluation/chemicals/sgars.htm>.

For more information on this semiannual report or a reevaluation, please visit DPR's Web site at <https://www.cdpr.ca.gov/docs/registration/reevaluation/reevals.htm> or contact either Mr. Russell Darling, Senior Environmental Scientist (Specialist), at <Russell.Darling@cdpr.ca.gov> or by telephone at 916-324-3547 or Ms. Brenna McNabb, Environmental Scientist at <Brenna.McNabb@cdpr.ca.gov> or by telephone at 916-445-0179.

Original signed by Shelley Lopez for Ann M. Prichard — *April 25, 2019*

Ann M. Prichard, Chief
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Date

cc: Mr. Russell Darling, DPR, Senior Environmental Scientist (Specialist)
Ms. Brenna McNabb, DPR, Environmental Scientist