
SENATE COMMITTEE ON ENVIRONMENTAL QUALITY

Senator Wieckowski, Chair

2017 - 2018 Regular

Bill No: SB 602
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Urgency: No
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Fiscal: No

SUBJECT: Pesticides: neonicotinoids: labeling

ANALYSIS:

Existing federal law:

- 1) Provides, under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), for federal regulation of pesticide distribution, sale, and use, and does the following:
 - a) Requires all pesticides to be registered by the United States Environmental Protection Agency (US EPA).
 - b) Authorizes the Administrator of the US EPA, if a pesticide generally causes unreasonable adverse effects on the environment, to take actions to cancel its registration or to change its classification.
 - c) Authorizes a state to regulate the sale or use of any federally registered pesticide or device in the state, but only if and to the extent the regulation does not permit any sale or use prohibited by FIFRA.

Existing California law:

- 1) Authorizes the state's pesticide regulatory program and mandates the California Department of Pesticide Regulation (DPR) to, among other things, provide for the proper, safe, and efficient use of pesticides essential for the production of food and fiber and for the protection of public health and safety, and protect the environment from environmentally harmful pesticides by prohibiting, regulating, or ensuring proper stewardship of those pesticides.
- 2) Requires every manufacturer of, importer of, or dealer in any pesticide, as specified, to obtain a certificate of registration from DPR before the pesticide is offered for sale.

- 3) Requires, if during or after the registration of a pesticide the registrant has factual or scientific evidence of any adverse effect or risk of the pesticide to human health, livestock, crops, or the environment that has not been previously submitted to DPR, the registrant to submit the evidence to DPR. Authorizes the director of DPR to adopt regulations to carry out the reevaluation process.
- 4) Requires DPR, on or before July 1, 2018, to issue a determination with respect to its reevaluation of neonicotinoids, and to adopt control measures necessary to protect pollinator health within 2 years, as specified.

This bill:

- 1) Requires, on and after July 1, 2018, labeling of commercially available seeds and plants sold at retail establishments, excluding noxious weed seeds and plants, that have been treated with a neonicotinoid pesticide.
- 2) Specifies that “treatment” includes foliar and granular treatments, in addition to seed coatings.
- 3) Defines “neonicotinoid” as imidacloprid, nithiazine, acetamiprid, clothianidin, dinotefuran, thiacloprid, thiamethoxam, or any other chemical designated by DPR as belonging to the neonicotinoid class of chemicals.
- 4) Prohibits the use of noncommercial neonicotinoids in California as of January 1, 2019.
- 5) Exempts pet care products and indoor pest control products meant for inside pests from the above prohibition.
- 6) States that noncompliance with the labeling requirements of this measure is a violation of Business and Professions Code unfair business practice provisions and prohibits the use of neonicotinoid pesticides, and exempts certain uses.

Background

- 1) *Neonicotinoids.* According to the US EPA, neonicotinoids are a class of insecticides with a common mode of action that affects the central nervous system of insects, causing paralysis and death. Some uncertainties have been identified since the initial registration of neonicotinoids regarding their potential environmental fate and effects, particularly as they relate to pollinators. Data suggests that neonicotinic residues can accumulate in pollen and nectar of treated plants, potentially exposing pollinators to high levels of the chemicals. Adverse effects data and bee kill incidents have also been reported, highlighting the potential direct and/or indirect effects of neonicotinic pesticides on pollinators.

- 2) *Bees*. Bees were once found in large parts of the Eastern and Midwestern United States, but the bees have suffered a dramatic decline in the last two decades due to habitat loss and degradation, along with pathogens and pesticides.

The bee was found in 31 states and Canadian provinces before the mid- to late-1990s, according to the final rule published in the Federal Register. But since 2000, it has been reported in only 13 states and Ontario, Canada. It has seen an 88% decline in the number of populations and an 87% loss in the amount of territory it inhabits. This means the species is vulnerable to extinction, even without further habitat loss or insecticide exposure.

Pollinator decline is a global trend. A United Nations sponsored report drawing on about 3,000 scientific papers concludes that about 40% of invertebrate pollinator species (such as bees and butterflies) are facing extinction. Since some 75% of food crops rely at least partially on pollinators, that raises serious concerns about the future of the global food supply.

Canada designated the rusty patched bumblebee species as endangered in 2012. The United States Fish and Wildlife Service designated it as endangered in January of 2017.

In October 2016, the United States Fish and Wildlife Service gave endangered status to seven species of yellow-faced bees native to Hawaii, the first time any U.S. bees received this kind of protection. In 2017, the rusty patched bumblebee was additionally added to the list of endangered species.

- 3) *Pollinators and Neonicotinoids*. Factors affecting pollinator health and bee colony losses due to Colony Collapse Disorder began to be identified in 2006. A National Research Council report in 2007, *Status of Pollinators in North America*, documented the decline of pollinators and discussed some of the possible causes as well as research and other actions needed to address the issue.

The prevailing theory among scientists in US EPA, United States Department of Agriculture (USDA) and the global scientific and regulatory community is that the general declining health of honey bees is related to complex interactions among multiple stressors including:

- Pests (*e.g.*, varroa mite), pathogens (*e.g.*, the bacterial disease American foulbrood) and viruses.
- Poor nutrition (*e.g.*, due to loss of foraging habitat and increased reliance on supplemental diets).
- Pesticide exposure.

- Bee management practices (e.g., long migratory routes to support pollination services).
- Lack of genetic diversity.

In California, beekeepers lost 40% of their hives in the last year. Since 2006, there has been an average loss of 30% of California hives. Wild bee populations have declined by 23% between 2003 and 2008 in the United States.

Historically, US EPA's pesticide risk assessment process for bees has been qualitative (i.e., not measured). The process relied primarily on developing an understanding of the types of effects that might be caused by the pesticide (hazard characterization), based on toxicity studies.

In 2011, US EPA began expanding the risk assessment process for bees to quantify or measure exposures and relate them to effects at the individual and colony level. This involved identifying additional data that would be needed to inform that process.

In November, 2012, US EPA, in collaboration with Health Canada's Pest Management Regulatory Agency and DPR, presented a quantitative risk assessment process for bees and other insect pollinators to the FIFRA Scientific Advisory Panel.

US EPA has begun to employ its new risk assessment framework for bees as part of its regulatory decision-making process for all pesticide chemistries. The new framework relies on a tiered process.

- a) The lowest tier (Tier I) is intended to serve as a screening tool. It employs conservative assumptions regarding exposure (i.e., assumptions that are likely to overestimate exposure) and uses the most sensitive toxicity estimates from laboratory studies of individual bees to calculate risk estimates.
- b) Higher tiers (Tiers II and III) rely on characterization of risk based on measured exposure values and colony-level effects studies and so are more realistic.
- c) Focuses on the major routes of exposure, including contact exposure (e.g., from overspray or direct contact with the pesticide on the plant surface) and dietary exposure (e.g., from consumption of contaminated pollen or nectar).
- d) Distinguishes different types of pesticide treatments, such as compounds applied to plant leaves or seed/soil-applied (systemic) compounds.

In June 2014, President Obama issued a memorandum establishing a Pollinator Health Task Force, co-chaired by USDA and US EPA, to create a National Pollinator Health Strategy that promotes the health of honey bees and other pollinators (including birds, bats, butterflies, and insects).

US EPA's actions to protect pollinators from pesticide exposure include:

- Proposing a plan to prohibit the use of pesticides that are toxic to bees when crops are in bloom and bees are under contract for pollination services. The plan also recommends that states and tribes develop pollinator protection plans and best management practices.
- Prohibited the use of certain neonicotinoid pesticides when bees are present.
- Expediting the re-evaluation of the neonicotinoid family of pesticides, as well as other pesticides, using the harmonized risk assessment process.
- Temporarily halted the approval of new outdoor neonicotinoid pesticide uses until new bee data is submitted and pollinator risk assessments are complete.
- Expediting the review of new Varroa mite control products.
- Developing new bee exposure and effect testing priorities for the registration of new pesticides, new pesticide uses, and registration review of existing pesticides.
- Issued data requirements and risk assessment approaches for pollinators as we review the registrations of all of the neonicotinoid pesticides.
- Established guidance and best practices for regional, state and tribal inspectors conducting FIFRA inspections of apparent cases of pesticide-related bee deaths.
- Developing a new risk management approach for considering the impacts of herbicides on monarch butterfly habitats and protecting milkweed from pesticide exposure.
- Issued a benefits analysis of neonicotinoid seed treatments for insect control in United States soybean production. EPA found neonicotinoid seed treatments were of little or no benefit to US soybean production.
- Providing farmers and beekeepers with EPA's residue toxicity time (RT₂₅) data as a means of gauging the lengths of time that specific pesticide products may remain toxic to bees and other pollinators following application of these products to plants.
- Working with pesticide manufacturers to develop new seed-planting technologies that will reduce dust that may be toxic to pollinators during the planting of pesticide-treated seed.
- Incorporating pollinator protection at EPA Facilities, on epa.gov, and in other EPA programs.

In January, 2016, US EPA and DPR released their draft assessment focused on how one of the most prominent neonicotinoids—Bayer's imidacloprid—affects bees.

This was the first of four risk assessments conducted by the US EPA and DPR on the class of pesticides known as neonicotinoids.

Reviewing dozens of studies from independent and industry-funded researchers, the US EPA's risk-assessment team established that when bees encounter imidacloprid at levels above 25 parts per billion—a common level for neonicotinoids in farm fields—they suffer harm. “These effects include decreases in pollinators as well as less honey produced,” the US EPA's press release states. California already prohibits use of the chemical on almonds and limits its application for other crops during bloom periods when bees are most likely to be present.

“Clearly, as a result of this, there might be more restrictions coming,” said Charlotte Fadipe, spokeswoman for the California Department of Pesticide

In January 2017, US Environmental Protection Agency published preliminary pollinator-only risk assessments for the neonicotinoid insecticides clothianidin, thiamethoxam, and dinotefuran and also an update to its preliminary risk assessment for imidacloprid, which was published in January 2016. The updated imidacloprid assessment looks at potential risks to aquatic species, and identifies some risks for aquatic insects.

The assessments for clothianidin, thiamethoxam, and dinotefuran, similar to the preliminary pollinator assessment for imidacloprid showed: most approved uses do not pose significant risks to bee colonies. However, spray applications to a few crops, such as cucumbers, berries, and cotton, may pose risks to bees that come in direct contact with residue. In its preliminary pollinator-only analysis for clothianidin and thiamethoxam, the EPA has proposed a new method for accounting for pesticide exposure that may occur through pollen and nectar.

Along with the preliminary risk assessments, the EPA is also issuing an updated registration review schedule for the four neonicotinoids to reflect the data being submitted in 2017.

According to DPR, DPR continues to work with US EPA on the risk assessments for certain neonicotinoids. Below is US EPA's latest table that shows an expected timeline for completion. As DPR moves closer to assessing the potential harms of these pesticides, it may warrant mitigation efforts. There are multiple ways to mitigate the potential harm from a pesticide, including a label change through US EPA, or DPR regulatory action, and others. At this time, DPR states that it has put a placeholder on the 2017 rulemaking calendar for a potential neonicotinoid regulation in case it determines that there is a need to begin mitigation this year and there is a determination to mitigate through regulation.

Table 3 - Updated Registration Review Schedule for the Neonicotinoids

| Activities | Estimated Date |
|---|----------------------------|
| Preliminary Pollinator Risk Assessments | |
| Imidacloprid | January 2016 - Completed |
| Clothianidin, Thiamethoxam, and Dinotefuran | January 2017 - Completed |
| Ecological Assessments (not including pollinators) | |
| Imidacloprid - Aquatic Only | January 2017 - Completed |
| Clothianidin, Thiamethoxam, and Dinotefuran | September 2017 |
| Human Health Assessments | |
| Imidacloprid | March 2017 |
| Clothianidin, Thiamethoxam, and Dinotefuran | September 2017 |
| Revised Pollinator Risk Assessments | |
| Imidacloprid, Clothianidin, Thiamethoxam, and Dinotefuran | Spring 2018 ^[1] |
| Registration Review Proposed Interim Decisions | |
| Imidacloprid, Clothianidin, Thiamethoxam, and Dinotefuran | March 2018 |
| Registration Review Interim Decisions | |
| Imidacloprid, Clothianidin, Thiamethoxam, and Dinotefuran | December 2018 |

- 4) *Restricted use.* Restricted materials are pesticides deemed to have a higher potential to cause harm to public health, farm workers, domestic animals, honeybees, the environment, wildlife, or other crops compared to other pesticides. With certain exceptions, restricted materials may be purchased and used only by or under the supervision of a certified commercial or private applicator under a permit issued by the County Agricultural Commissioner (CAC).

Certification and licensing of commercial pesticide applicators falls to DPR while certification of private applicators is carried out by the CACs.

California requires permits for restricted materials so that the local CAC can assess, in advance, the potential effects of the proposed application on health and the environment. Permits are time - and site - specific, and include use practices to reduce adverse effects. The CAC may deny permits or require feasible alternatives to be used.

- 5) *Other states and nations.* Several other states and other countries have restricted, banned or are considering restrictions for this class of pesticide.

^[1] The completion of the registration review action by this date is based on the Agency's current understanding of the date additional data to support this action are expected to be received.

In April 2016, Maryland became the first state to impose major restrictions on neonics use, with a partial ban taking effect in January 2018. Maryland's act allows farmers to apply the pesticide to their crops, but will ban regular consumers from purchasing the pesticide for home use.

Oregon is also regulating neonicotinoids, but only bans neonicotinoid use on one genus of tree. Eugene, Oregon has taken the ban one step further and banned neonicotinoid use on city-owned land. Seattle has also banned the pesticide on city-owned land.

Outside of the United States, Italy implemented a partial ban on neonicotinoid application to seeds and the ground in 2008. Five years after the ban was initiated, researchers noticed a significant improvement in the quantity of bees and colonies. However, the researchers noticed that bee mortality rates remained high in areas where plants' leaves (as opposed to their seeds or the ground) are treated by the pesticide. In 2013 the EU implemented a temporary restriction on the use of neonicotinoids by prohibiting their use on crops "attractive to bees." Additionally, France is moving toward a total ban on pesticides that can harm bees.

Comments

Purpose of Bill. According to the author, "The labeling of neonicotinoid-treated plants will help to protect bees and other pollinators, one of the most critical components of our fragile ecosystem. Research – including a recent analysis by independent scientists at Sussex University – confirms that toxic neonicotinoid pesticides are not only harmful to honey bees, but also to a broad range of other animals, including bumble bees, butterflies, birds and water insects, posing a serious threat to the food system, the livelihood of beekeepers, and to the environment.

"In 2014, the Task Force on Systemic Pesticides, a group of global, independent scientists studying the impact of pesticides, reviewed more than 1100 peer-reviewed studies, and concluded that neonicotinoids are a key factor in bee declines and also harm other essential organisms. Their report called for immediate regulatory action to restrict the use of neonicotinoids.

"These harmful pesticides are now the most widely used class of insecticides in the world and their use continues to grow. Research has shown that consumers often overuse neonicotinoids. Products approved for home and garden use may be applied at rates up to 120 times higher than what is approved for agricultural uses. Consumers also may be unaware that many "bee friendly" garden plants and vegetable seedlings sold at home garden centers have been pre-treated with these bee-killing pesticides.

“SB 602 is an opportunity to have a tremendously positive impact on this issue by empowering consumers to decide for themselves which plants to buy for their gardens. This bill takes a consumer protection approach by requiring all neonicotinoid-treated plants to be labeled as such when sold in nurseries.”

Related/Prior Legislation

1. AB 1789 (Williams, Chapter 578, Statutes of 2014) requires, on or before July 1, 2018, the DPR to issue a reevaluation of neonicotinoids and requires, within two years after making the reevaluation, DPR to adopt any control measures necessary to protect pollinator health.
2. SB 1282 (Leno and Allen, 2016) requires labeling of all commercially available seeds and plants treated with neonicotinoid pesticide and states that it is a violation of Business and Professions Code unfair business practice provisions not to do so and prohibits the use of neonicotinoid pesticides, and exempts certain uses. SB 1282 passed the Senate Committee on Environmental Quality on a vote of 4 to 2. The bill failed passage on the Senate Floor on a vote of 18 to 15.

SOURCE: Bee Smart California

SUPPORT:

American Bird Conservancy
 Center for Biological Diversity
 Defenders of Wildlife
 Ecological Farming Association
 Friends of the Earth
 Good Earth Natural Foods
 Urban Bee San Francisco
 Xerces Society for Invertebrate Conservation
 3 Individuals

OPPOSITION:

Agricultural Council of California
 Almond Alliance of California
 American Chemistry Council
 California Agricultural Aircraft Association
 California Association of Nurseries & Garden Centers
 California Chamber of Commerce
 California Citrus Mutual
 California Cotton Ginners & Growers Association

California Farm Bureau Federation
California Fresh Fruit Association
California Grocers Association
California Hotel & Lodging Association
California Manufacturers and Technology Association
California Seed Association
Consumer Specialty Products Association
Responsible Industry for a Sound Environment
Western Agricultural Processors Association
Western Growers Association
Western Plant Health Association

ARGUMENTS IN SUPPORT: Supporters assert that “there is a wealth of scientific literature showing adverse impacts to bees and other pollinators from uses of neonicotinoids, and the EPA has confirmed that these systemic insecticides can adversely impact bees. In their 2015 proposed action, “Proposal to Mitigate Exposure to Bees from Acutely Toxic Pesticide Products,” the agency notes, “Systemic pesticides and/or pesticides with prolonged residual toxicity may result in residues in pollen and nectar at levels that can impact bees and hive health.” These adverse impacts to bees and hive health can cause direct harm to growers as a result of decreased pollination services.”

Supporters assert that, “In addition to killing bees outright, research shows that even low levels of these toxic pesticides cause serious harm by impairing bees’ ability to learn, find their way back to the hive, collect food, produce new queens and mount an effective immune response. Additional studies on impacts to bumblebees show that exposure to neonicotinoids is associated with fewer queen bees, reduced reproduction, and impaired foraging and homing abilities.”

Supporters state, “Neonicotinoids are now the most widely used class of insecticides in the world and their use continues to grow. Research has shown that consumers often overuse neonicotinoids. Products approved for home and garden use may be applied at rates up to 120 times higher than what is approved for agricultural uses. According to a recent survey by the Department of Pesticide Regulation, 39% of homeowners contract with a certified pest control operator, while about 33% apply pesticides themselves.”

Supporters are concerned that “consumers also may be unaware that many ‘bee friendly’ garden plants and vegetable seedlings sold at home garden centers have been pre-coated or pre-treated with these bee-killing pesticides. According to a 2014 [report](#), more than half of “bee-friendly” plants purchased at Home Depot, Walmart,

and Lowes stores in 18 cities across the US and Canada had levels of neonicotinoids at sufficient levels to kill bees outright.”

According to supporters, “SB 1282 will help consumers support local bee populations by avoiding landscape plantings and pesticide products that contain harmful neonicotinoids. In addition, reclassifying neonicotinoids as “restricted materials” will ensure that only licensed pesticide applicators are applying these chemicals, properly and according to the labels in order to minimize impacts to pollinators. California has the ability to be a leader in protecting bees and other pollinators, one of the most critical components of our food supply and fragile ecosystem.”

ARGUMENTS IN OPPOSITION: The opposition states that, “hundreds of studies on bee health have been published, adding to an extensive body of knowledge on this issue. The consensus of these studies points to multiple factors affecting bee health, especially lack of diverse forage and the impact of parasites like the Varroa mite. USDA and US EPA convened a working group several years ago to address the question of pollinator health. Their report found the biggest culprit to bee die-off to be the parasitic Varroa mite.”

The opposition argues that “SB 602 creates serious problems for others in the agriculture industry. First, by changing the status of the entire class of neonicotinoids to restricted use, this bill threatens the future existence of California’s \$3 billion citrus industry. California citrus farmers have been fighting the spread of the Asian Citrus Psyllid (ACP) for a number of years because of its ability to transmit the deadly disease Huanglongbing (HLB), which has no known cure and is the singular cause for destroying citrus industries in other parts of the country and world.”

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