TO PRESIDENT DONALD J. TRUMP, SECRETARY ROBERT F. KENNEDY JR., THE PRESIDENT'S MAKE AMERICA HEALTHY AGAIN COMMISSION,

THE UNITED STATES DEPARTMENT OF HEALTH AND HUMAN SERVICES, THE DEPARTMENT OF AGRICULTURE, AND THE ENVIRONMENTAL PROTECTION AGENCY

A PETITION TO MAKE AMERICA HEALTHY AGAIN

"We're going to get toxic chemicals out of our environment, and we're going to get them out of our food supply. We're going to get them out of our bodies."

Donald J. Trump, August 30th, 2024

April 29, 2025

The Honorable Donald J. Trump
President of the United States
The White House
1600 Pennsylvania Ave. NW
Washington, DC 20500

Dear President Trump,

On behalf of the Pollinator Stewardship Council and the undersigned organizations, we respectfully submit this petition urging the Commission to address the widespread use of neonicotinoid insecticides as part of your mandate to investigate environmental factors contributing to the childhood chronic disease crisis.

The creation of the Make America Healthy Again Commission and its charge—to study toxic exposures, food production techniques, government policies, and industry influence—directly relates to the concerns raised here. The adoption of systemic neonicotinoid insecticides, which treat plants as delivery systems for pesticides, introduced novel risks that were not properly evaluated at the time of initial registration. These risks include pervasive contamination of soil, water, and food, posing threats to humans, pollinators and ecosystems.

Going forward, basic reforms to the EPA's risk assessment process are fundamental to ensuring that mistakes of this magnitude are not continued, or repeated. A healthy environment is inseparable from human health: protecting pollinators and soil health is essential for a safe food system and for preventing further chronic health issues among children.

We urge the Commission to incorporate the actions outlined in this petition into the Make Our Children Healthy Again Assessment and Strategy. Specifically, we request investigation of pesticide-driven health risks, suspension of existing neonicotinoid approvals, and restoration of scientific integrity in regulatory decision-making.

The Pollinator Stewardship Council is available to meet with any Commission members to provide additional information, answer questions, or further support your work. **Restoring human health must begin from the ground up: healthy soils grow healthy plants, nourish healthy bees, and support the healthy food essential for children's health and future generations.**

Sincerely,

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Authentic Honey of New York
Barnstable Bee Association
Battle of Athens Advanced Bee Club
Bayou Honey
Bayou Tortue Apiaries, LLC
Bee Kissed Honey
Bee Virus Screening, Inc (DBA BVS, Inc)
Bee Warriors
Beekeepers Association of Southern California
Beekeepers Association of the Ozarks
Beelieve Hawaii
Beelightful Bee Company
Bees in the Cities
BeeSquared
Benzie Bee Guild
Big T's Honeybee Farm
Biggest Little Bee City
Blount County Beekeepers Association
Brass Bee Apiary
Buddha And The Bees, LLC
Hill City Honey
California Almond Pollination Service, Inc
Carey Apiary and Farm
Central Colorado Beekeeping Assoc
Central Ohio Bee Association
Champlain Valley Apiaries
Chemical Free Beekeeping
Copper Country Beekeeping Club
Country Blossoms Honey, LLC
Delaware Beekeepers Association
Desert Creek Honey
Essex County Beekeepers
Four Corners Beekeepers Association
Franklin County Beekeepers Association
Geauga County Beekeepers Association
Georgia Beekeepers Association
Goody Bees
Hampden County Beekeepers Association
Help Save the Bees Foundation
Hidden Hollow Farm
Holland Area Beekeepers Association
Honey Bee Wild LLC
HP's Bees
Kansas Honey Producers
kasia.and.bees
Keiner's Apiary
Kentuckiana Beekeepers Association
Little Traverse Bay Bee Guild
Manda Bees
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Marin Beekeepers
Medina County Beekeepers Association
Meramec Valley Beekeepers
4 Corners Beekeeper Assn.
Michigan Beekeepers Association
Mile Hive Bee Club
Millers Honeybees
Monadnock Beekeepers Association
NaughtyBeeHoney
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Non Toxic San Clemente
Norfolk County Beekeepers Association
North Central Beekeepers Club
Northwest New Jersey Beekeepers Assoc.
Ohmstede Honey Farm
Old Mill Honey Co
Owosso Bee Club
Peaks of Otter Beekeepers
PemBee Apiaries
People & Pollinators Action Network
Person County Beekeepers Association
Pine River Beekeeping Club
Plant Harmony
Plymouth County Beekeepers Association
Pollinate Minnesota
Pollinator Friendly Alliance
Portland Metro Beekeepers
Portland Urban Beekeepers
Public Employees for Environmental Responsibility
Putnam County Indiana Beekeepers Association
Queen's Orders Honey
R Honey Pots
Re:wild Your Campus
Reelfoot Beekeepers Association
Renova Sustainable Agriculture, LLC
Rockingham County Bee Association
Saint Louis Beekeepers
San Diego Beekeeping Society
Santa Barbara Bee Club
Save the Bees Foundation
SCBA EAST
Shorty's Enterprises LLC
Sonoma County Beekeepers Association
South Dakota Volunteer Naturalists
SouthEast Beekeeping Club
Spencer County Beekeepers Association
Spring Valley Beekeepers
Summit County Beekeeping Association
Sumter County Beekeepers
Sustainable Resilient Longmont
South Western Ohio Beekeepers Association
Texas Beeworks
Twisted Willow/Gallia County Beekeepers
Vermont Beekeepers Association.
Warm Colors Apiary
Wildabees
Wingfield Honey Company

I. INTRODUCTION.

This Petition on behalf of America's beekeepers urges the Make America Healthy Again Commission (the "Commission") to take action to protect both the pollinators and the children of this country from the dangers of the neonicotinoid insecticides that have permeated the natural environment as a consequence of more than twenty (20) years of approvals by the United States Environmental Protection Agency ("EPA").[1] The EPA approvals have been (a) based upon flawed and incomplete science, and (b) in derogation of the known risks these insecticides pose both to honey bees and to children.

The principal proponents of this Petition are the Pollinator Stewardship Council ("PSC") and the American Beekeeping Federation ("ABF"). PSC is a national nonprofit organization comprised of commercial beekeepers and supporters whose mission is to defend managed and native pollinators vital to a sustainable and affordable food supply from the adverse impacts of pesticides. ABF is a national nonprofit organization that acts on behalf of the beekeeping industry on issues affecting the interests and the economic viability of the various sectors of the industry. This Petition is also supported by some 113 local and regional beekeeping organizations that are identified above. Other organizations have also expressed interest in joining in this Petition, with time constraints for the filing of the Petition precluding the listing of additional organizational supporters in this submission. A full list of supporters will be provided in a follow-up submission.

This Petition urges the Commission to take action to protect the pollinators essential to securing America's food supply. The rise of neonicotinoids—plant-incorporated pesticide delivery systems—and their pervasive usage by means of treated crop seeds has coincided with the mass devastation of pollinator populations throughout the nation and many other countries worldwide. Compared with the early 1990s, United States agriculture is forty-eight times more toxic to insect life; neonicotinoids accounted for ninety-nine percent of the

[1] This is not the only food and pesticide-related petition that the Commission has received; the Center for Biological Diversity (the "Center") also submitted a petition, dated February 18, 2025, similarly discussing the dangers of pesticide in our food. *See* https://biologicaldiversity.org/programs/environmental_health/pdfs/FINAL-MAHA-Petition-2.18.25.pdf. The Center's petition also observed the danger of neonicotinoids in the nation's food supply.

oral toxicity loading in 2014.[2] Over the last eight months alone, hundreds of millions of bees have suddenly died.[3] The federal government has long been aware of the severe danger neonicotinoids pose to pollinators but has refused to take corrective action. Foreign pesticide manufacturers such as Bayer (a German company) and Syngenta (part of the Syngenta Group, which is entirely owned by a Chinese state-owned enterprise) have flooded the United States with neonicotinoid products.

Research on the effects of neonicotinoids on humans and particularly infants and children shows evidence of substantially increased risk of child death in utero, brain thinning, decreased motor activity, learning and behavioral effects, reduced weight at birth, and delayed sexual maturation, among other maladies. Recent studies have observed statistically significant correlations between imidacloprid—a common neonicotinoid—and multiple birth defects, as well as autism spectrum disorder after regular exposure to imidacloprid products. EPA itself has observed that "[i]f humans are exposed to very high amounts of neonicotinoids, they could also experience harmful effects such as neurotoxicity (e.g., tremors and decreased motor activity), reproductive, or developmental effects." More research is needed to examine the impacts of neonicotinoids on the children of this country. Further study and interim action to protect children from the dangers of neonicotinoids falls squarely within the mandate of the Commission.

Members of PSC and other organizations and individuals identified herein have suffered significant loss of bees and bee colonies as a result of certain insecticides containing neonicotinoids.[4] Beekeepers nationwide have suffered extraordinary losses due to widespread use of neonicotinoids. Survey data from 2023–2024 suggests that in a one-year period, beekeepers lost fifty-five percent of their managed honey bee colonies.[5] Bees

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2 Michael DiBartolomeis, Susan Kegley, Pierre Mineau, Rosemarie Radford, Kendra Klein, *An assessment of acute insecticide toxicity loading (AITL) of chemical pesticides used on agricultural land in the United States*, PLOS ONE 1, 10, 12 (2019) (https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0220029).

3 https://www.cbsnews.com/news/bee-deaths-food-supply-stability-honeybees/.

4 Non-lethal doses of multiple neonicotinoids have been found to interfere with an insect's immune response, thereby making bees more susceptible to maladies such as deformed wing virus ("DWV"). *See* Gennaro Di Prisco, *et al.*, *Neonicotinoid clothianidin adversely affects insect immunity and promotes replication of a viral pathogen in honey bees*, PNAS 18466, 18468–18469 (2013) (https://www.pnas.org/doi/pdf/10.1073/pnas.1314923110). DWV is widely recognized as contributing to colony collapse disorder.

5 Agostina Giacobino, Nathalie Steinhauer, Samantha Brunner, Natasha Garcia-Andersen, Dan Aurell, Stephanie Rogers, Geoffrey Williams, *Preliminary Results From*

are exposed to neonicotinoids from a variety of sources, including seed coatings or soil, through pollen, nectar, guttation (meaning secretion) of fluid/water from treated plants, and surface water.[6]

The loss of pollinators directly impacts food production: roughly one-third of the world's food crops depend on pollinators.[7] Some scientists estimate that one of every three bites of food exists because of pollinators.[8] In the words of Bayer Global, the producer of two of the three most common neonicotinoids, "The value of their [bees and other pollinators] contribution to people is significant, both economically and in terms of ensuring food security and nutrition, supporting livelihoods, enabling agricultural diversification and maintaining natural ecosystems."[9] Bayer estimates that the value of pollinators is in the range of $235 to $577 billion in annual global food production.[10] Certain crops, such as California almonds, are dependent on pollination by bees supplied by migratory beekeepers. An almond tree that is pollinated produces as much as fifteen times more nuts than a tree that is not pollinated.[11] California produces eighty percent of the world's almonds.[12] Pollinator losses have made it difficult for migratory beekeepers to keep up with demand—making it likely that thousands of orchards will be left without pollinators.[13]

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the 2023–2024 US Beekeeping Survey: Colony Loss and Management (https://apiaryinspectors.org/US-beekeeping-survey).

6 Anne Fairbrother, John Purdy, Troy Anderson, and Richard Fell, *Risks of Neonicotinoid Insecticides to Honeybees*, ENVIRON. TOXICOL. CHEM. 719, 727 (2014) (https://pmc.ncbi.nlm.nih.gov/articles/PMC4312970/pdf/etc0033-0719.pdf).

7 *See* U.S. Department of Agriculture, *The Importance of Pollinators* (https://www.usda.gov/about-usda/general-information/initiatives-and-highlighted-programs/peoples-garden/importance-pollinators); *see also* Grant J. Goedjen, Paul D. Capel, John D. Barry, William A. Arnold, *Occurrence and distribution of neonicotinoids and fiproles within groundwater in Minnesota: Effects of lithology, land use and geography*, SCIE. OF THE TOTAL ENVIRON. (2024) (https://www.sciencedirect.com/science/article/abs/pii/S0048969724065677?via%3Dihub)

8 *See* Bayer, *The Importance of Insect Pollinators for Agriculture*, p. 1 (https://www.bayer.com/sites/default/files/BEEINFOrmed_7_The-Importance-of-Insect-Pollinatorsjlouz8q1.pdf) (observing that "35 percent of the crops we eat, in terms of the volume produced globally, depend on animal pollination to some extent.").

9 *Id.*

10 https://www.bayer.com/en/agriculture/article/economic-value-pollinators#:~:text=Every%20season%2C%20pollination%20from%20honey,production%20relies%20on%20their%20contribution.

11 https://www.cbsnews.com/news/bee-deaths-food-supply-stability-honeybees/.

12 https://www.almonds.com/sites/default/files/2016_almond_industry_factsheet.pdf.

13 John Cox, *'Unprecedented' bee losses threaten almond crop in California*, The Bakersfield Californian, February 23, 2025

Moreover, honey produced by bees is used in a wide range of products. United States honey production in 2023 totaled 139 million pounds.[14] The value of honey production in 2025 is estimated at $350,000,000.00.

The EPA has approved and continues to allow hundreds of authorized uses for neonicotinoids despite knowing the severe risks they pose to bees and bee colonies and despite increasing evidence that use of these pesticides is of little to no benefit in terms of crop yields (as reflected by crop yield data from nations that have banned neonicotinoids as well as by research conducted by Cornell University).[15] EPA has actual and constructive knowledge of the acute risk that neonicotinoids pose to bee populations. Court decisions have recognized that EPA has acted arbitrarily by approving neonicotinoid pesticides.[16] EPA has failed and refused to prohibit or rescind registered uses of neonicotinoids that, even when performed by third persons following all requirements of EPA, nevertheless pose an unreasonable (and foreseeable) risk of catastrophic loss to bee populations.

The following purposes of the Commission, as set forth in Executive Order 14212, are relevant to this Petition:

1. "re-direct our national focus, in the public and private sectors, toward understanding and drastically lowering chronic disease rates and ending childhood chronic disease" (EO 14212, § 1);
2. "restore the integrity of the scientific process by protecting expert recommendations from inappropriate influence and increasing transparency regarding existing data" (*id.*; *see also* § 5(ix) (calling for the "restor[ation of

(https://www.keenesentinel.com/news/national_world/unprecedented-bee-losses-threaten-almond-crop-in-california/article_9ee0aa0a-f053-11ef-bc32-83606ce515d6.html).

14 https://downloads.usda.library.cornell.edu/usda-esmis/files/hd76s004z/hm50wd54j/fq979h127/hony0324.pdf.

15 Just as human beings are over-prescribed medications that harm human health (*see* EO 14212 § 5(ii)–(iii)), farmers likewise are overusing pesticides that have net negative effects to the environment, to biological species, to the food chain, and to human health.

16 *See Pollinator Stewardship Council v. U.S. EPA*, 806 F.3d 520, 532 (9th Cir. 2015) ("Without sufficient data, the EPA has no real idea whether sulfoxaflor will cause unreasonable adverse effects on bees, as prohibited by FIFRA. Accordingly, the EPA's decision to register sulfoxaflor was not supported by substantial evidence."); *cf. In re Pesticide Action Network North America*, 798 F.3d 809, 813 (9th Cir. 2015) (Holding, in context of request for mandamus after EPA failed to act for eight years on administrative petition regarding danger of the pesticide chlorpyrifos, that "[i]ssuing a writ of mandamus is necessary to end [EPA's] cycle of incomplete responses, missed deadlines, and unreasonable delay.").

the] integrity of science, including by eliminating undue industry influence[.]"); and

3. "assess the threat that potential over-utilization of medication, certain food ingredients, certain chemicals, and certain other exposures pose to children with respect to chronic inflammation or other established mechanisms of disease, using rigorous and transparent data, including international comparisons" (*id.* § 5(a)(ii)).

For the reasons that follow, the Commission should recommend that the federal government immediately take all necessary steps to suspend existing neonicotinoid approvals and prohibit the outdoor use of neonicotinoid products nationwide.[17]

II. BACKGROUND.

A. Function and Purpose of Neonicotinoids.

Neonicotinoids are a type of insecticide that acts on the central nervous system of insects. Neonicotinoid means "new nicotine-like insecticide." Neonicotinoids are chemically similar to nicotine. More specifically, all neonicotinoids function by binding to nicotinic acetylcholine receptors in the post-synaptic neurons of an insect's central nervous system. At low concentrations, neonicotinoids cause excessive nervous stimulation. At high concentrations, they cause paralysis and death. Neonicotinoids have high lethality to pollinators; application of neonicotinoids at recommended levels to a single acre used for soybean plantings is enough to kill millions of honey bees.

Neonicotinoids may be applied to crops by, among other things, foliar spray application (meaning spray application to plant foliage), soil treatment and through (largely) corn and soybean seed treated with neonicotinoids. EPA has authorized neonicotinoid usage for both agricultural and non-agricultural purposes. There are a number of diverse types of neonicotinoids, including, but not limited to, acetamiprid, imidacloprid, clothianidin, dinotefuran, and thiamethoxam.

The neonicotinoids enter the environment by direct application, such as liquid sprays, and may move off-site by drift, dissolving in runoff, and/or as residue absorbed into eroded sediment. Neonicotinoids are water-soluble; a small quantity applied to a seed will

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[17] *See* 7 U.S.C. § 136d(b) (allowing the EPA Administrator to cancel registration under FIFRA) and (c) (allowing the EPA Administrator to immediately suspend registration under FIFRA).

dissolve upon contact with water and migrate into the ground.[18] Only approximately five percent of the neonicotinoid active ingredient remains in the crop plant.[19] Ninety-five percent disperses into the wider environment—lakes, rivers, etc. Neonicotinoids have been found in springs and private wells.[20] The neonicotinoid imidacloprid has been reported to remain in soil for hundreds of days and even up to 1,000 days.[21]

Neonicotinoids are widely in use in the United States. The majority of neonicotinoid usage in the United States is through treated crop seeds. Seeds treated with neonicotinoids may be treated with multiple chemicals, including fungicides, compounding the toxicity of the chemicals.[22] After 2014, the United States Geological Survey stopped estimating treated seed use of neonicotinoids. Thus, available data dramatically understates the prevalence of neonicotinoid usage. The Neonicotinoid usage that is known includes:

(a) **Acetamiprid**. Between 2014 and 2018, approximately 80,000 pounds of acetamiprid were used to treat over 850,000 acres.

(b) **Imidacloprid**. Between 2014 and 2018, across the United States and all agricultural usage, the estimated cumulative usage of 891,400 pounds of imidacloprid was applied to agricultural crops.

(c) **Thiamethoxam**. Between 2014 and 2018, over 185,000 pounds of thiamethoxam were applied annually via foliar or soil treatment to over 3 million acres of agricultural crops.

(d) **Clothianidin**. During the most recent five years of available survey data (2014 – 2018), approximately 50,000 pounds of clothianidin were applied to less than 500,000 acres of agricultural crops annually, in 25 states.

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18 *See* Thomas James Wood and Dave Goulson, *The environmental risks of neonicotinoid pesticides: a review of the evidence post 2013*, ENVIRON. SCIE. POLLUT. RES. 17285, 17285 (2017) (https://pmc.ncbi.nlm.nih.gov/articles/PMC5533829/).

19 *See id*.

20 Goedjen *et al.*, *supra* n. 8.

21 J.M. Bonmatin, et al., *Environmental fate and exposure; neonicotinoids and fipronil*, ENVIRON. SCIE. POLLUT. RES. 35, 40 (2015) (https://pmc.ncbi.nlm.nih.gov/articles/PMC4284396/pdf/11356_2014_Article_3332.pdf).

22 *See* Demian Nunez and Madeline Potter, *Neonicotinoids: The Good, The Bad, and The Ugly*, University of Maryland Dept. of Entomology (2020) (observing that neonicotinoids and fungicides are often applied together). Some farmers make their own pesticide combinations using one or more neonicotinoids. Such combinations, known as "tank mixing," involves a grower splicing together pesticides in an effort to reduce the number of subsequent applications. Although some labels may warn against particular kinds of tank mixing, there is no prohibition on the practice and no regulatory oversight.

B. EPA Has Approved Hundreds of Uses of Neonicotinoids.

EPA has authority to permit and allow the use of pesticides pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA"), 7 U.S.C. § 136a, *et seq*. FIFRA provides that: "[t]o the extent necessary to prevent unreasonable adverse effects on the environment, the Administrator [of the EPA] may by regulation limit the distribution, sale, or use in any State of any pesticide that is not registered under this subchapter." 7 U.S.C. § 136a(a).

FIFRA requires EPA to continuously monitor existing pesticides. 7 U.S.C. § 136a(g)(1)(A)(i) ("The registrations of pesticides are to be periodically reviewed."). EPA reviews each registered pesticide every fifteen years to ensure all registered pesticides continue to meet the initial registration criteria (viz., the pesticide does not cause "unreasonable adverse effects on the environment").

In the late 1990s and early 2000s, EPA granted registration to a variety of neonicotinoids. For example, the first product containing acetamiprid was registered in 2002. Clothianidin was first registered for use in 2003. There are currently approximately forty-five (45) registered end-use products for clothianidin and 78 end-use products for thiamethoxam. EPA has statutory authority to rescind the registration of any pesticide that EPA decides, based upon new evidence, research, or analysis, does not meet the "unreasonable adverse effects on the environment" standard.

C. EPA's Original Safety Determinations Were Premised Upon Incomplete Data That Primarily Focused on High-Dose Exposure to Neonicotinoids.

As part of implementing the federal Food Quality Protection Act of 1996, EPA has required pesticide manufacturers to conduct testing analyzing several types of responses of rat offspring after pregnant/lactating rats ingest the test substance.[23] The offspring are exposed to the test substance in utero and in their mother's milk. To register the neonicotinoids under FIFRA, the manufacturers were required to provide the scientific data upon which EPA approval would be based.[24] The manufacturers presented evidence

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[23] *See* Jennifer Beth Sass, Nathan Donley, and William Freese, *Neonicotinoid Pesticides: evidence of developmental neurotoxicity from regulatory rodent studies*, FRONT. TOXICOL. 1, 3 (2024) (https://bit.ly/41JMIfQ).

[24] *See* 40 C.F.R. § 152.42; *see also* 40 C.F.R. § 152.50 (requiring the applicant seeking FIFRA registration to "submit materials" so that EPA may "make the determination required by FIFRA sec. 3(c)(5)(B)").

showing that five neonicotinoids caused brain thinning in at least some of the offspring in the high-dose treatment group.[25] Contrary to agency policy, the manufacturers did not provide EPA brain morphometric data for the mid- and low-dose groups.[26] Despite lacking brain morphometric data at these lower doses, EPA *simply assumed* that there was only a brain thinning effect at the high dosage.[27] EPA data evaluation records from the time of initial registration reveals a variety of troubling consequences of exposure to neonicotinoids, including at middle and low doses, such as decreased auditory startle reflex, decreased motor activity, learning and behavioral effects, and delayed sexual maturation.[28] Industry research offered up to EPA has regularly been sheltered from peer review by manufacturer claims of proprietary research processes. Industry intimidation of scientists for the purpose of tipping the scales has been well-documented and continues to this day.[29]

D. EPA's Application of Its Treated Seed Exception to FIFRA Registration.

It is widely recognized that seeds treated with neonicotinoids—particularly corn and soybean seeds—account for the majority of neonicotinoid usage in the United States. EPA does not require these products to go through FIFRA registration under what is known as the "treated article exemption." A new neonicotinoid-coated seed product need not be accompanied by **any** scientific evidence regarding environmental or human impacts associated with the product before it goes on the market. The treated article exemption was adopted purely for EPA's administrative efficiency.[30] The specific regulation EPA relies upon exempts from FIFRA registration the following:

> An article or substance treated with, or containing, a pesticide to protect the article or substance itself (for example, paint treated with a pesticide to protect the paint coating, or wood products treated to protect the wood against insect or fungus infestation), if the pesticide is registered for such use.

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25 Sass, Donley, and Freese, *supra* n. 24, p. 3.

26 *See id.*

27 *See id.*

28 *See generally id.*

29 *See e.g.*, E.G. Vallianatos with McKay Jenkins, *Poison Spring: The Secret History of Pollution and the EPA*, (Bloomsbury Press) (2014).

30 *See* James Meinert, *Should you know about the pesticides in your clothes? Nanosilver and the treated articles exemption to FIFRA*, 16 MINN. J.L. SCI. & TECH. 1011, 1012 (2015) (https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1024&context=mjlst).

40 CFR § 152.25(a).

Unlike the (non-organic) items identified in the regulation, seeds turn into roots, branches, and leaves, and emit organic material into the environment—all of which are permeated with neonicotinoids and directly impact the environment and other living matter. EPA has allowed a regulatory exception premised upon efficiency to exempt from review the treated-seed products accounting for the majority of neonicotinoid usage in the United States. The explosion of neonicotinoids found in food and water in recent decades is the direct result of unmitigated neonicotinoid seed coating usage.

E. EPA's Ten-Plus Year Registration Review Process for Neonicotinoids.

EPA has been conducting a registration review process of the neonicotinoids for over a decade.[31] On January 14, 2020, the EPA prepared a report titled "Final Bee Risk Assessment to Support the Registration Review of clothianidin and thiamethoxam" (the "Bee Risk Assessment"). The explicit purpose of the Bee Risk Assessment was to "determine potential risks of thiamethoxam and clothianidin use to honey bees[.]"

The Bee Risk Assessment determined that there is a "strong weight of evidence" that the following registered/permitted uses of thiamethoxam and clothianidin "pos[e] a risk to honey bee colonies":

For clothianidin:

- Foliar applications to cotton;
- Foliar applications to cucurbits [including melons, pumpkins, squash, and cucumber];
- Foliar, pre-bloom applications to grapes;
- Foliar and soil applications to ornamentals.

For thiamethoxam:

- Foliar applications to cotton;
- Foliar applications to cucurbits;
- Foliar, pre-bloom applications to orchard crops (i.e., citrus, pome, stone and tropical fruits, tree nuts);
- Soil, pre-bloom applications to citrus;

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[31] *See Center for Food Safety v. Environmental Protection Agency*, No. 23-cv-02714, 2024 WL 4859081, at *19 (N.D. Cal. Nov. 20, 2024) (observing that "the registration review process began in 2008 and 2011, [and] it remains in progress and currently is not due until 2026.").

- Foliar and soil, pre-bloom applications to berries;
- Foliar applications to honey bee attractive fruiting vegetables (i.e., okra, roselle, chilis and peppers); and
- Foliar and soil applications to ornamentals.

According to EPA, a "strong weight of evidence" means that the evidence considered, when aggregated, results in a "strong evidence of risk conclusion." Furthermore, "[t]he strongest evidence of risk is represented by cases where assumptions related to exposure and effects are not expected to have a major influence on risk conclusions and there are multiple lines of evidence indicating the potential for effects to honey bee colonies." EPA concluded that for both clothianidin and thiamethoxam, there is "a robust weight of evidence (i.e., strong weight) . . . that foliar applications to cucurbits pose a risk to honey bee colonies foraging on treated fields."

With respect to the risk to honey bee colonies associated with ornamental plants, EPA found that:

> [T]he risk conclusions presented here are additionally supported by three available beekill incident reports following soil applications of clothianidin to either urban or residential trees. Two of the incidents were determined to be registered uses while the legality of the use was undetermined in the third. In two of the incidents, the attribution of the incident to the use of clothianidin was determined to be possible while it was probable in the third.

The Bee Risk Assessment determined that there is a "moderate weight of evidence" that the following registered/permitted uses of thiamethoxam and clothianidin "pos[e] a risk to honey bee colonies":

For <u>clothianidin</u> *and* <u>thiamethoxam</u>:

- Soil, post-bloom applications to citrus;
- Soil applications to cucurbits; and
- Foliar applications to residential lawns.

<u>Thiamethoxam</u> only:

- Soil applications to attractive fruiting vegetables.

According to EPA, a "[m]oderate evidence of risk is represented by cases where some lines of evidence indicate risk concerns; however, not all lines of evidence suggest risk, or where there are some uncertainties associated with the data that can influence the risk conclusion."

F. EPA's Proposed Interim Decisions for Neonicotinoids.

In January 2020, EPA approved "Proposed Interim Registration Review Decision[s]" ("PIDs") for the neonicotinoids. The PID for acetamiprid contains the following finding related to bees: "There are acute . . . and chronic . . . risks of concern to adults and larvae from registered uses of acetamiprid." The PID for acetamiprid also observed that there have been "37 reported incidents associated with the use of acetamiprid involving honey bees, with the numbers of colonies affected per incident ranging from 9 to 12,000."

EPA acknowledged that it has "identified ecological risks of concern [with neonicotinoids], particularly to pollinators and aquatic invertebrates, as a result of many of the same attributes that make the neonicotinoids effective pest management tools. Risk mitigation measures are being proposed to address ecological risks of concern." The PIDs did not propose to rescind or cancel any registered use(s) of the neonicotinoids.

G. EPA's Biological Evaluations of Neonicotinoids.

EPA conducted "biological evaluations" or ("BEs") for three of the Neonicotinoids, i.e., thiamethoxam, clothianidin, and imidacloprid. The biological evaluations are the first step in a review process under the federal Endangered Species Act. As part of the biological evaluations, EPA determines whether the subject pesticide was likely to "take" (or kill) one individual of a wide variety of species (including fish, amphibians, invertebrates, plants, birds, and terrestrial invertebrates such as bees, among other things) when used lawfully as authorized by EPA.

EPA finalized its biological evaluations in June 2022. Based upon the biological evaluations, EPA prepared a risk assessment analysis report in May 2023. The risk assessment determined that "imidacloprid is characterized as highly toxic to bees, highly toxic to birds and moderately toxic to mammals on an acute exposure basis." Further, "[a]vailable data suggests potential effects to honeybee and bumble bee colonies that manifest as impacts to numbers of adults and decreases in brood." Similar findings were made for both thiamethoxam and clothianidin.

EPA predicted that Clothianidin put 166 listed species in jeopardy and was likely to adversely affect 49 mammals. EPA predicted that Imidacloprid put 199 listed species in jeopardy and was likely to adversely affect 62 mammals. EPA predicted that Thiamethoxam put 204 listed species in jeopardy and was likely to adversely affect 47 mammals. The risk assessment did not study the effect of neonicotinoids on human beings. As discussed immediately below, although the effects of neonicotinoids have not yet been

thoroughly studied, available data indicate detrimental cognitive and physiological human impacts associated with neonicotinoid exposure, particularly to children in utero.

H. EPA Recognizes Neonicotinoids May Have Adverse Effects on Human Beings.

In summer 2024, EPA updated its occupational exposure assessments for seed treatment uses for three neonicotinoids (Clothianidin, Imidacloprid, and Thiamethoxam). EPA observed that "[i]f humans are exposed to very high amounts of neonicotinoids, they could also experience harmful effects such as neurotoxicity (e.g., tremors and decreased motor activity), **reproductive**, or **developmental effects**."[32]

Scientific research supports EPA's finding neonicotinoids may have harmful effects on human beings. A 2022 paper found that ninety-five percent of pregnant women tested across the country had neonicotinoids in their bodies.[33] Food was identified an "an important source of exposure." Studies that have analyzed neonicotinoids in foods have found that they are pervasive in fruits, vegetables, honey, and pollen.[34] Pregnant women pass neonicotinoids to their children through the placenta.[35]

A 2017 report authored by professors at Harvard Medical School and Penn State College of Medicine, among others, analyzed the impact of consumption of fruits and vegetables containing pesticide residue on child birth.[36] The study analyzed 325 female

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[32] https://www.epa.gov/pesticides/epa-releases-updated-occupational-exposure-assessments-seed-treatment-uses-three (emphasis added).

[33] *See* Jessie P. Buckley, *et al. Exposure to Contemporary and Emerging Chemicals in Commerce among Pregnant Women in the United States: The Environmental Influences on Child Health Outcome (ECHO) Program*, ENVIRON. SCIEN. & TECH. 6560, 6568 (2022) (https://pubs.acs.org/doi/10.1021/acs.est.1c08942#).

[34] *See generally* Mei Chen, Lin Tao, John McLean, and Chensheng Lu, *Quantitative Analysis of Neonicotinoid Insecticide Residues in Foods: Implication for Dietary Exposures*, JOURNAL OF AGRICUL. AND FOOD CHEM. 6082 (2014) (https://pubs.acs.org/doi/10.1021/jf501397m).

[35] *See* Henglin Zhang, *et al.*, *Neonicotinoid Insecticides and Their Metabolites Can Pass Through the Human Placenta Unimpeded*, ENVIRON. SCIEN. & TECH. 17131 (2022) (https://pubmed.ncbi.nlm.nih.gov/36441562/).

[36] Yu Han Chiu, *et al.*, *Association Between Pesticide Residue Intake From Consumption of Fruits and Vegetables and Pregnancy Outcomes Among Women Undergoing Infertility Treatment With Assisted Reproductive Technology*, JAMA INTERN. MEDIC. 17 (2017) (https://pmc.ncbi.nlm.nih.gov/articles/PMC5814112/).

participants who reported how often they typically consumed certain foods.[37] The authors used the US Department of Agriculture Pesticide Data Program to classify fruits and vegetables according to their mean pesticide residue status in American food supply.[38] The analysis found that "high-pesticide residue FV [fruit and vegetable] intake was adversely associated with probability of clinical pregnancy and live birth per initiated cycle."[39] Compared with women in the lowest quartile of high-pesticide residue fruit and vegetable intake, women in the highest quartile had 18% lower probability of clinical pregnancy and 26% lower probability of live birth.[40] Furthermore, "[h]igh-pesticide residue FV intake was positively associated with probability of total pregnancy loss."[41]

Studies have been performed on the relationship between gestational exposure to insecticides and developmental delay and autism. Starting in 2003 the University of California Davis Center for Children's Environmental Health conducted the Childhood Autism Risks from Genetics and Environment ("CHARGE") study. This study analyzed the relationship between autism spectrum disorder and exposure to various chemicals and biologics, including pesticides. The CHARGE study found a significant correlation (odds ratio 2.0) between imidacloprid and autism spectrum disorder for consistent users of imidacloprid products.[42] Another study found a significant association between the imidacloprid and various birth defects, including anotia (adjusted odds ratio 3.0), traverse limb deficiency (adjusted odds ratio 2.9), and craniosynostosis (adjusted odds ratio 3.5).[43] Another study found that children who were small for their gestational age had a

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37 *Id.* at 18.

38 *Id.*

39 *Id.* at 20.

40 *Id.*

41 *Id.*

42 Alexander P. Keil, Julie L. Daniels, and Irva Hertz-Picciotto, *Autism spectrum disorder, flea and tick medication, and adjustments for exposure misclassification: the CHARGE (CHildhood Autism Risks from Genetics and Environment) case–control study*, ENVIRON. HEALTH, p. 4 (2014) ("We observed that, upon restricting exposure to individuals reporting consistent use of imidacloprid during pregnancy, the odds of reported imidacloprid exposure among mothers of children with ASD is twice that of mothers of TD children.") (https://ehjournal.biomedcentral.com/articles/10.1186/1476-069X-13-3).

43 Suzan L. Carmichael, *et al.*, *Residential Agricultural Pesticide Exposures and Risks of Selected Birth Defects Among Offspring in the San Joaquin Valley of California*, p. 32 (2015) (https://hh-ra.org/wp-content/uploads/carmichael2015.pdf).

"significantly higher" level of neonicotinoids in their urine than children who had a birth weight that was average for their gestational age.[44]

A different report observes that neonicotinoids were found to decrease the size of the same parts of the brain—the corpus callosum and the caudate-putamen—in rats that have been found to be reduced in children of smoking mothers.[45] The reduction of these portions of the human brain have been correlated with clinically diagnosed ADHD.[46]

Pediatricians have publicly raised alarm regarding the dangers—birth defects and cognitive impacts—that neonicotinoids pose to children.[47] As noted by a group of medical professionals writing in support of legislation to ban neonicotinoid-treated seeds and certain neonicotinoid uses: "Chemicals that impact the developing nervous system, like lead and mercury, have no safe level of exposure during pregnancy and early life development. The brain and nervous system have very little capacity for repair, so exposures that occur during development can lead to neurological decrements that last a lifetime."[48] Scientific analysis of the relationship between exposure to neonicotinoids and harmful human health effects remains a developing field and the studies that do exist observe the need for further study in this area.[49]

I. The European Union and Certain American States Have Banned the Use of Neonicotinoids.

In 2018 the European Union ("EU") banned all outdoor uses of three neonicotinoids—imidacloprid, clothianidin, and thiamethoxam. The EU banned these substances because of the risks they posed to pollinators generally and honey bees specifically. In addition, the EU withdrew the approval of thiacloprid in early 2020.

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44 Go Ichikawa, *LC-ESI/MS/MS analysis of neonicotinoids in urine of very low birth weight infants at birth*, Plos One 1, 7 (2019) (https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0219208&type=printable).

45 Sass, Donley, and Freese, *supra* n. 24, p. 7.

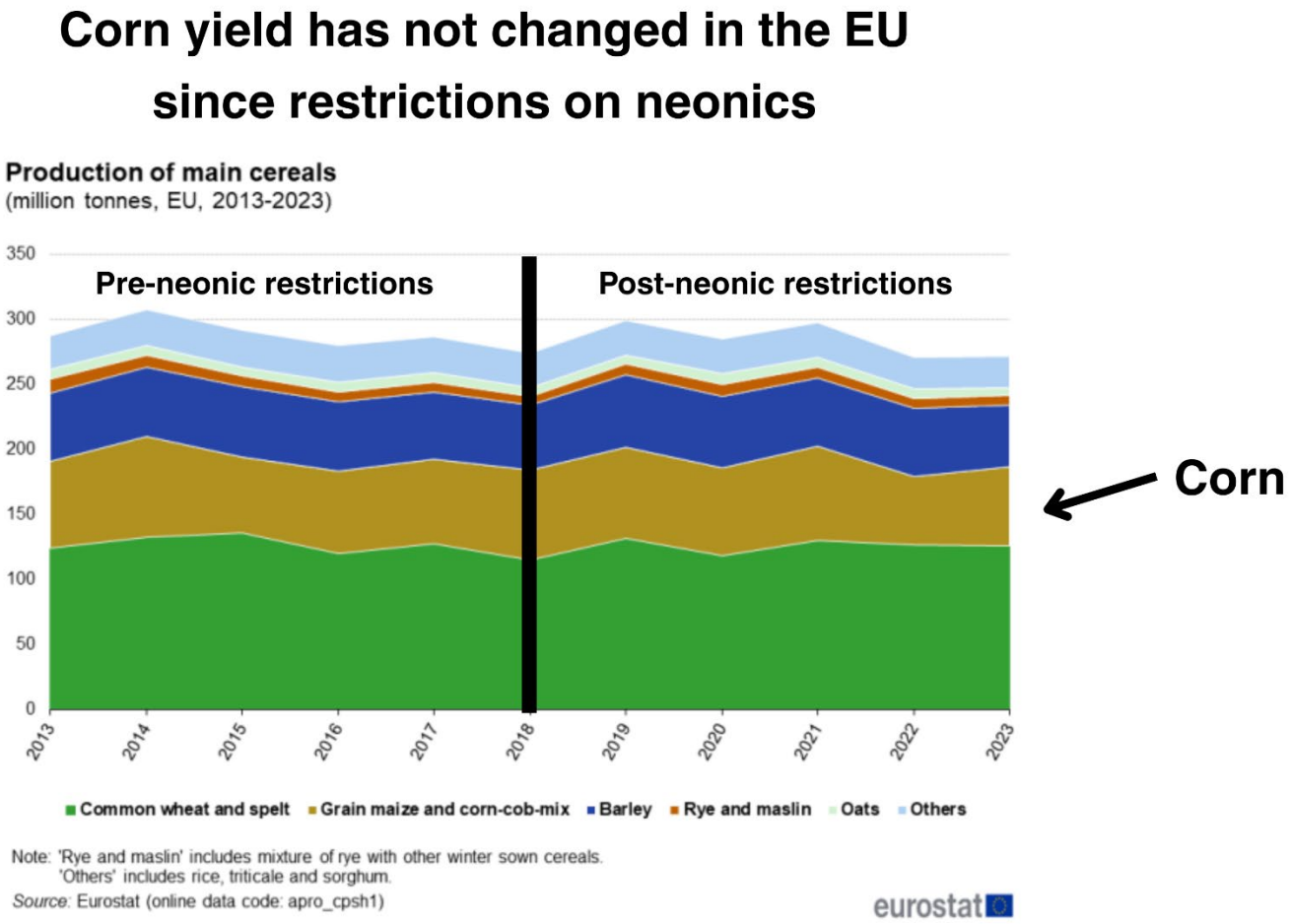
46 *Id.*

47 Philip J. Landrigan, *State must pass toxic insecticides act to protect children*, Albany Times Union (2021) (https://www.pressreader.com/usa/albany-times-union/20210830/281779927223783).

48 *See* https://www.nrdc.org/sites/default/files/letter-nys-health-concerns-neonicotinoid-pesticides-20220201.pdf.

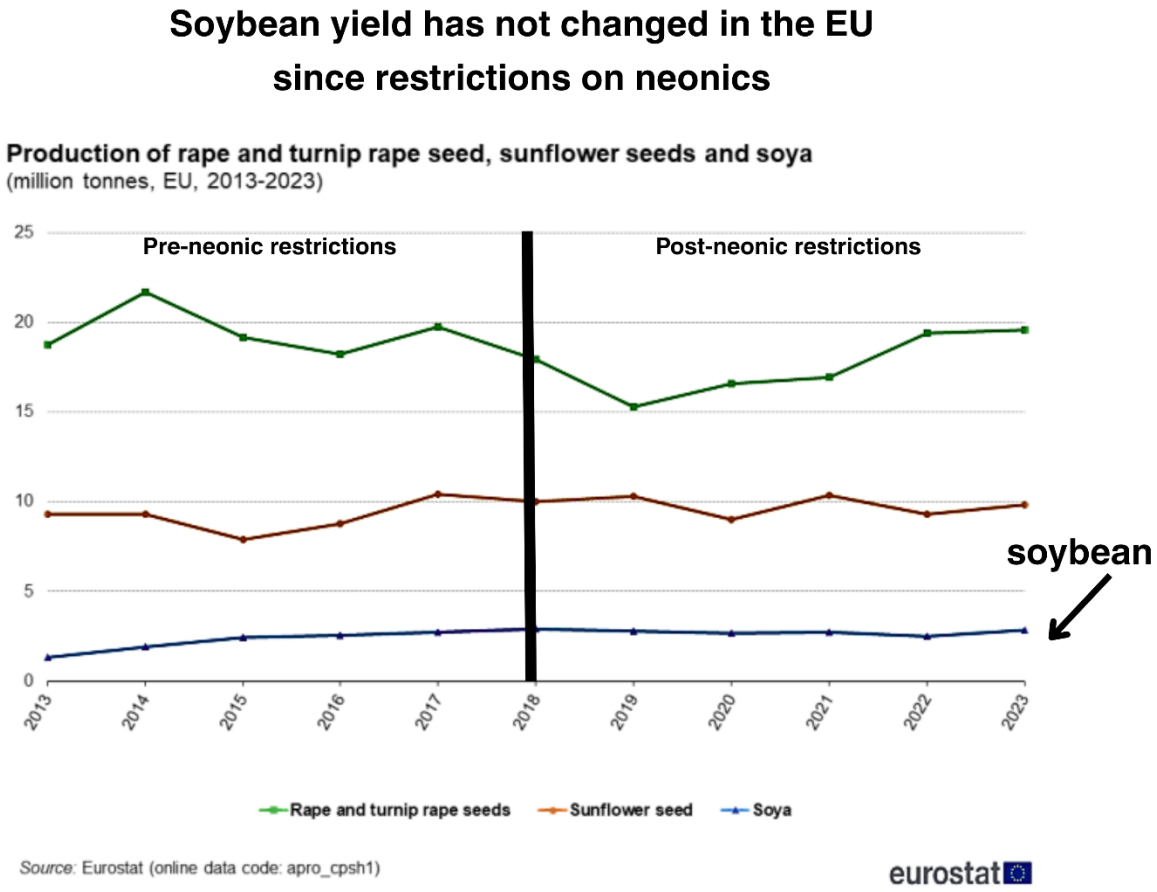
49 *See* Keil, Daniels, and Hertz-Picciotto, *supra* n. 43; Andria M. Cimino, Abee L. Boyles, Kristina A. Thayer, and Melissa J. Perry, *Effects of Neonicotinoid Pesticide Exposure on Human Health: A Systematic Review*, ENVIRON. HEALTH PERSPECTIVES, 155, 160 (2017) (https://pmc.ncbi.nlm.nih.gov/articles/PMC5289916/pdf/EHP515.pdf).

Thiacloprid is no longer lawful to use in the European Union. There is evidence that neither corn yield nor soybean production has diminished since these neonicotinoids were banned. The chart on the next page shows corn production in the EU since 2013.[50] The year the EU banned outdoor use of three neonicotinoids (2018) includes a vertical line to show output before and after the ban.



[50] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Agricultural_production_-_crops#Cereals.

The following chart shows soybean production in the EU since 2013[51]:



Over ten American states have restricted the use of neonicotinoids. In 2023, after a state-commissioned cost-benefit analysis performed by Cornell University,[52] New York prohibited the use of neonicotinoid-treated seeds for corn, soybean, and wheat production. Other jurisdictions, such as Quebec, Canada, require a demonstration of need before certain neonicotinoids may be used to treat seeds.[53]

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51 https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Agricultural_production_-_crops.

52 *See generally* Travis A. Grout, Phoebe A. Koenig, Julie K. Kapuvari, and Scott H. McArt, *Neonicotinoid Insecticides in New York State* (https://cornell.app.box.com/v/2020-neonicotinoid-report) (hereafter, "*Cornell Study*").

53 *See* https://www.quebec.ca/en/agriculture-environment-and-natural-resources/environmental-protection/pesticides/application-agricultural-areas/understanding-agronomic-justification-prescription.

J. Limited Evidence of Benefits From Corn and Soybean Seeds Treated with Neonicotinoids.

Most uses of neonicotinoids are for treating crops, such as corn and soybean seeds.[54] There is evidence casting considerable doubt upon whether neonicotinoids provide significant benefits to crop production. The Cornell University cost-benefit study found that in eighty-seven to ninety-three percent of field trials there was no increase (or decrease) in corn yield when either chemical alternatives to neonicotinoids were used or when the seed was wholly untreated.[55] Even comparing plots where no insecticides were used, eighty-nine percent of field trials observed no increase in corn yield when neonicotinoid-treated seeds were used.[56] Likewise, eighty-two to eighty-nine percent of field trials found no significant change in soybean yield when either chemical alternatives to neonicotinoids were used or when the seed was untreated.[57] Accordingly, use of neonicotinoids for seed treatments fails to meaningfully increase output productivity. There is no benefit to neonicotinoid usage that would outweigh the serious environmental and health consequences associated with their use.

K. Pesticide Manufacturers Seek to Immunize Themselves Through State and Federal Legislation.

In numerous states as well as at the federal level, pesticide manufacturers are currently seeking to pass legislation that would immunize them from state tort lawsuits.[58] The manufacturers argue that they should be immune from tort liability based upon EPA's product registration. In other words, the manufacturers argue that because EPA has determined that the pesticides do not cause unreasonable adverse effects on the environment—a decision based upon data and research provided *by the manufacturers themselves*—the States should be prohibited from imposing tort liability where the pesticides have caused harm. Such immunity would be fundamentally inconsistent with the pronounced policy stated in Executive Order 14212 to "aggressively combat the critical

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[54] Sara LaJeunesse, *Rapid increase in neonicotinoid insecticides driven by seed treatments* **(**https://www.psu.edu/news/research/story/rapid-increase-neonicotinoid-insecticides-driven-seed-treatments).

[55] *Cornell Study* p. 22.

[56] *Id.*

[57] *Id.*

[58] *See* https://nationalaglawcenter.org/states-introduce-pesticide-liability-limitation-bills-in-2025-legislative-session/ (discussing proposed legislation in Florida, Idaho, Iowa, and Missouri).

health challenges facing our citizens, including the rising rates of mental health disorders, [and] . . . other chronic diseases." Such immunity would also irreparably harm public trust by creating a belief in the public that special interests have successfully manipulated the law to avoid liability for the harm they have caused (*cf.* EO 14212 § 2(a) (discussing that federally funded health research "should avoid or eliminate conflicts of interest that skew outcomes and perpetuate distrust.").

III. PETITIONERS' REQUESTS OF THE COMMISSION.

As shown by the above discussion, the status quo with respect to neonicotinoid use in the United States is unacceptable. That neonicotinoids are causing severe losses to pollinators is well-documented. Neonicotinoids permeate our waters, our food, our bodies, and even our brains. Despite the pervasiveness of neonicotinoids, a comprehensive and thorough examination of the impact of neonicotinoids on human beings has not taken place. The evidence that exists suggests correlation to cognitive disorders, including ADHD and autism spectrum disorder. Moreover, in parts of the world where neonics have been banned, there has been no effect on crop yields, begging the question whether the severe and documented costs of using these pesticides are justified by any benefit, let alone any sufficient benefit. Based upon the foregoing, Petitioners are asking the Commission to take the following actions:

1) Include neonicotinoids in the study of contributing factors to childhood chronic diseases (see EO 14212, § 4(a));
2) Include study of the impact of the loss of pollinators in the assessment regarding the American diet (*id.*);
3) Until the impact of neonicotinoids on human beings and on the natural environment has been adequately studied, recommend in favor of immediate suspension/cancellation of the neonicotinoids' FIFRA registration;
4) Based upon the impacts neonicotinoids have on pollinators and the importance of pollinators to the American economy and the American diet, recommend in favor of immediate restrictions on the use of neonicotinoids for outdoor applications, including, but not limited to, immediate suspension of using neonicotinoids to treat seeds;
5) Perform a comprehensive cost-benefit analysis on the use of neonicotinoids in agricultural applications, assessing the related environmental and human costs.

Any such analysis should take input from beekeepers, medical experts, and independent environmental scientists;

6) Recommend that the Commission establish a firm policy position against legalized immunity for chemical manufacturers for harm caused by neonicotinoids because immunity is not in the public interest;
7) In order to restore the integrity of the scientific process, close examination of the EPA administrative review process should be undertaken to identify and eliminate inherent conflicts of interest. Pesticide manufacturers seeking FIFRA registration should be required to publicly share all corresponding scientific research so that it can be peer reviewed and scrutinized by independent regulators (*see* EO § 5(a)(ix)–(x)). Independent, peer-reviewed research should be favored over industry-sponsored or industry-conducted research;
8) The pesticide cancellation process should be modified to facilitate rapid removal of pesticides from the market when scientifically reliable field research demonstrates that the chemicals are unsafe for the environment, the pollinators, or human health.

We stand ready to assist the Commission with its important work and would gladly provide any additional information or assistance the Commission may find useful, including service on any committee formed by the Commission.

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