VT Farmers Letter of Support
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Purpose: Protect Vermont's Pollinators, Food Systems and Health from Toxic "Neonic" Pesticides with H.706

March, 2024
VT Legislature and the Honorable Phil Scott
Vermont State Capitol
Montpelier, VT 05633
Re: Protect Vermont's Pollinators, Farms, Food Systems and Health from Toxic "Neonic" Pesticides with H.706

Dear Legislators of Vermont and Governor Phil Scott:

On behalf of the undersigned Vermont farms, farmers, farmworkers, and food professionals, we urge you to pass and sign into law H.706, a bill to eliminate unnecessary and harmful uses of neurotoxic neonicotinoid pesticides ("neonics"). With evidence that widespread neonic exposure and contamination is only continuing to worsen in Vermont; with evidence that farmers are transitioning in neighboring geographies with few challenges[1]; and in recognition of the greater movement regionally and globally to move away from neonicotinoids and support farms in adapting (such as NY, Quebec, Ontario, the European Union) - the state must act to protect its agricultural and ecological future.

Neonics devastate the bees, birds, and other pollinators critical to Vermont's food security, agricultural economy, and environment. Pollinator-dependent crops in VT include apples, squash, peppers, melons, sunflowers, buckwheat, tomatoes, blueberries, and cherries, among others. The VT Beekeepers Association reminds us that, "according to VAAFM's [Vermont Agency of Agriculture, Food and Markets] own statistics, Vermont beekeepers have lost at least 25% of their bees during the winter months for the last three years. The Bee Informed Partnership, a national organization that tracks U.S. honey bee colony losses, reports combined summer and winter colony losses for Vermonters much higher at 35-85% each year for the last four years"[2]. As one Vermont beekeeper told the House Agriculture Committee in 2022, "there's a saying in the industry that we're no longer beekeepers - we've become bee replacers." Further, 33% of the state's 350 native bee species are considered critically imperiled or imperiled, according to Vermont Center for EcoStudies[3]. According to the Vermont Agency of Ag Food and Markets most recent report on "Pollinators and Pesticides", globally, 85% of wild plant species are directly dependent on pollination to develop berries and seeds[4]. With global fruit and vegetable production down 3-5%[5] because of a lack of pollinators, and top crops like apples, blueberries, and cherries commonly "pollinator-limited" nationwide from a shortage of native as well as managed bees, Vermont's farmers are already seeing lower yields because of pollinator losses.

Extensive and unnecessary neonic use is a critical factor directly affecting these losses. As potent neurotoxic insecticides, neonics have made U.S. agriculture 48-times more harmful to insect life since their introduction[6], and in-depth Cornell research confirms their harm to pollinators in our region[7]. Designed to permeate plants—making their fruit, nectar, pollen, leaves, and other tissues poisonous to insects—neonics persist in soils for years, move easily in rain and irrigation water, and are widely used. The Vermont Agency of Agriculture has reported clothianidin (an active ingredient of Neonics) residues above the level of concern in several surface waterways in Vermont [8]. By entering waterways and the subterranean water table, neonics can travel onto neighboring land, forests, or cropping areas. Darby et al. found that in crop fields with no historic use of neonicotinoids in Vermont, residues were present in 75% of soil samples collected at 2.5-6" in depth[9]. As such, neonics now contaminate soil, water, and plant life across agricultural regions on a nearly unprecedented scale; and people, animals, farms and agricultural crops are being exposed unknowingly and without consent [10]. Beyond pollinators, neonics destroy the natural biologically mediated systems critical to Vermont farmers. They kill natural predators of plant pests, such as beetles and wasps, that farmers often count on for pest control [11]. In fact, studies show neonic use can increase pest pressure by eliminating predators of common pests [12]. Neonics also harm soil insects critical to breaking down plant matter, impairing soil stability and nutrient cycling in crop fields [13]. Some research shows that neonics may even harm soil health at the most basic level, impacting the soil microbes important for plant growth and nitrogen cycling [14].

Extensive research from Cornell University finds that corn, soybean, and other seed coatings—the largest source of neonic pollution in Vermont—provide no overall economic benefits to farmers[15]. And this conclusion continues to be confirmed by ongoing field trials in NY and Vermont[16]. According to the 2023 pesticide usage data reported by VAAFM, 99.6% of corn and 34% of soybeans seed in VT are treated with neonics, covering 90,000 and 7,000 acres of Vermont agricultural land respectively[17]. In other words, farmers are nearly universally planting neonic treated seed to prophylactically address potential pest issues, are very rarely agronomically benefiting from these uses at all, and on a net level, are not economically benefiting. The companies manufacturing the pesticides, applying them to the seeds, and selling them to the farmer are the ones profiting from their widespread use. Farmers must be supported in this transition away from neonics.

A move away from neonic corn and soybean coatings could encourage the adoption of cropping practices and methods of pest management which protect water quality, soil and human health, and wildlife such as birds and pollinators. We have heard this referenced in the testimony of farmers who have transitioned away from neonics in Quebec[18]; we recognize that the USDA-recommended methods for combating the pests supposedly targeted by neonic seed coatings are practices like no-till, and crop rotation[19]; and we acknowledge that there is a broader movement creating more space for transitioning to grass and grazing based ruminant farming systems. Independent academic research also shows that no-till fields planted with cover crops and non- insecticide seed coatings tend to have fewer pests [20]. Importantly, farmers who decide to use neonics on their crops are not the only ones affected by that use in the agricultural community - even farmers, beekeepers, and home gardeners who don't use neonic

seed coatings are affected by their use. These impacts include, but are not limited to: the loss of pollinators, predators, and other “good bugs”; creeping contamination that is carried by the wind, water and the living tissue of non-target plants; the contamination of crops; and the accumulation in the soil, and in the water used to irrigate crops and feed livestock.

Water in New York and Vermont showcases this widespread contamination. The Vermont Agency of Agriculture has reported clothianidin residues above the level of concern in several surface waterways in Vermont. These detections include, but are not limited to, 63% of samples collected from Jewett Brook, 31% from Hungerford Brook, and 18% from Mill River[21]. Neonics appear frequently in state surface waters at levels expected to cause chronic sublethal impacts[22]— ravaging aquatic insect populations that birds, fish, amphibians, and other wildlife depend upon for food. Extensive source water contamination threatens clean drinking water too, as conventional water treatment typically fails to remove neonics[23]. With evidence showing neonic levels near ubiquitous and rising in wildlife[24] and also in the bodies of our regional neighbors in New York themselves[25], relief is urgently needed to reduce harmful exposure. Research links neonic exposures in people to birth defects of the heart[26], and brain[27] autism-like symptoms[28], decreased testosterone[29], memory loss and muscle tremors[30], reduced cognitive abilities[31], and other neurological conditions[32]. Further, neonic-related health burdens and food security losses will be especially felt by communities already confronting disproportionate exposure to other environmental hazards and unequal access to capital and fresh, healthy, and affordable produce.

H.706 presents a common-sense solution, which allows time and the potential for resources to support farmers currently using neonics in transitioning. It prohibits the sale or use of neonic coatings on corn, soybean, wheat and cereal seeds by 2029; it prohibits outdoor uses that risk significant harm to pollinators by 2025 (flowering crops, ornamental plants, turf grass); and requires BMPs for permitted uses of neonics. The bill contains an exemption for agricultural and environmental emergencies. It would eliminate a significant percentage of the neonics released into Vermont’s environment every year.

With neonic pollution and its impacts in Vermont only getting worse, every year of inaction leads to more insect and bird losses, more water contamination, and ever greater threats to Vermont’s farms, food systems and people now and in the future. Action to rein in hazardous neonic pollution must not wait another year, and we must support farmers using neonics in transitioning. We strongly support H.706 and urge you to sign this critical bill into law.

Thank you for your time and attention to this important issue.

Respectfully,

[1] Quebec Farmer Panel, 2024: https://www.youtube.com/watch?v=N9OWx9XWIaE

[2]https://www.vermontbeekeepers.org/2-uncategorised/1191-vermont-beekeepers-refute-state-claims-of-honey-bee-health#:~:text=Across%20our%20entire%20beekeeping%20industry,environmental%20impacts%2C%20and%20pesticide%20use.

[3]https://stateofbees.vtatlasoflife.org/

[4]https://agriculture.vermont.gov/sites/agriculture/files/Pollinators%20and%20Pesticides%20-%20Vermont%20CORE%20INSERT.pdf

[5] https://ehp.niehs.nih.gov/doi/10.1289/EHP10947

[6] Michael DiBartolomeis et al., An Assessment of Acute Insecticide Toxicity Loading (AITL) of Chemical Pesticides Used on Agricultural Land in the United States, PLoS One (Aug. 6, 2019), https://bit.ly/2Yr4Xc7; Margaret Douglas et al., County-level Analysis Reveals a Rapidly Shifting Landscape of Insecticide Hazard to Honey Bees (Apis Mellifera) on US Farmland, Scientific Reports (Jan. 21, 2020), https://go.nature.com/2SKhjHP.

[7] https://cornell.app.box.com/v/2020-neonicotinoid-report; Travis A. Grout et al., Neonicotinoid Insecticides in New York State, Cornell University (June 23, 2020), https://bit.ly/2XIB2cA [hereinafter "Cornell Neonic Report"]. 11 Pierre Mineau, Impacts of Neonics in New York Water (2019), https://on.nrdc.org/2IXsO0O [hereinafter "Mineau 2019"].

[8]https://legislature.vermont.gov/Documents/2022/WorkGroups/House%20Agriculture/Bills/H.626/Witness%20Documents/H.626~Morgan%20Griffith~Surface%20Water%20Monitoring%20for%20Neonicotinoids%20Presentation~2-3-2022.pdf

[9]https://agriculture.vermont.gov/sites/agriculture/files/doc_library/2024_0122%20Neonic%20Research%20Update_Darby.pdf

[10] See, e.g., Minnesota Department of Natural Resources, Preliminary Results from Pesticide Study Show Widespread Neonicotinoid Exposure in Minnesota White-Tailed Deer (Mar. 1, 2021), https://bit.ly/3cKxj5G; Michelle Hladik & Dana Kolpin, First National-Scale Reconnaissance of Neonicotinoid Insecticides in Streams Across the USA, Environmental Chemistry (Aug. 2015), https://bit.ly/3eR0bvu (at least one neonic detected in 53% of streams tested across the U.S.).

[11]Penn State, Honeydew Contaminated with systemic insecticides threatens beneficial insects, (2022) https://www.psu.edu/news/agricultural-sciences/story/honeydew-contaminated-systemic-insecticides-threatens-beneficial/.

[12] Penn State, Insecticides foster "toxic" slugs, reduce crop yields,(2014) https://www.psu.edu/news/research/story/insecticides-foster-toxic-slugs-reduce-crop-yields/.

[13]Written testimony of Professor John Tooker, Pennsylvania State University College of Agricultural Sciences, to the NYS Standing Committee on Environmental Conservation (Sep. 23, 2021), https://bit.ly/40lJHQ9; Kirsten A. Pearsons and John F. Tooker, Preventative Insecticide Use Affects Arthropod Decomposers and Decomposition in Field Crops, Applied Soil Ecology, (Jan. 2021), https://bit.ly/41Ol28f.

[14]Mona Parizadeh et al., Neonicitinoid Seed Treatments have Significant Non-Target Effects on Phyllosphere and Soil Bacterial Communities, Front. Microbiol., Sec.Terrestrial Microbiology, Volume 11(Jan. 13, 2021), https://www.frontiersin.org/articles/10.3389/fmicb.2020.619827/full.

[15]13 Travis A. Grout et al., Neonicotinoid Insecticides in New York State, Cornell University (June 23, 2020), https://bit.ly/2XIB2cA [hereinafter "Cornell Neonic Report"]. 11 Pierre Mineau, Impacts of Neonics in New York Water (2019), https://on.nrdc.org/2lXsO0O [hereinafter "Mineau 2019"].
[16]14 Cornell University, Seed Treatment Alternatives: Efficacy of Insecticide Treatment Alternatives to Neonicotinoids Against Seedcorn Maggot in Corn, https://tinyurl.com/43rppeyd; https://agriculture.vermont.gov/sites/agriculture/files/doc_library/2024_0122%20Neonic%20Research%20Update_Darby.pdf
[17]https://agriculture.vermont.gov/sites/agriculture/files/doc_library/2023_1211%20Vermont%20neonicotinoid%20use.pdf
[18] Quebec Farmer Panel, 2024: https://www.youtube.com/watch?v=N9OWx9XWIaE
[19] Sappington et al. (USDA), Prevalence of Sporadic Insect Pests of Seedling Corn and Factors Affecting Risk of Infestation, Journal of Integrated Pest Management (Jun. 15, 2018), https://academic.oup.com/jipm/article/9/1/16/5033787?login=true (under "seed corn maggot")
[20]Written testimony of Professor John Tooker, Pennsylvania State University College of Agricultural Sciences, to the NYS Standing Committee on Environmental Conservation (Sep. 23, 2021), https://bit.ly/40lJHQ9.
[21]ttps://legislature.vermont.gov/Documents/2022/WorkGroups/House%20Agriculture/Bills/H.626/Witness%20Documents/H.626~Morgan%20Griffith~Surface%20Water%20Monitoring%20for%20Neonicotinoids%20Presentation~2-3-2022.pdf
[22] Pierre Mineau, Impacts of Neonics in New York Water (2019), https://on.nrdc.org/2lXsO0O [hereinafter "Mineau 2019"].
[23] Kathryn L. Klarich et al., Occurrence of Neonicotinoid Insecticides in Finished Drinking Water and Fate During Drinking Water Treatment, Envtl. Sci. and Tech. Letters (Apr. 2017), https://bit.ly/2PMRunk; Suffolk County Water Authority, 2022 Drinking Water Quality Report, http://s1091480.instanturl.net/dwqr2022/AWQR_2022_FINAL.pdf (showing the neonics imidacloprid appears in tap water in some of Suffolk County's largest water distribution areas).
[24] Dan Gunderson, Data Show Increasing Insecticide Levels in Minnesota Deer (Aug. 23, 2022), https://bit.ly/3N05jys.
[25]See Dr. Kathy Nolan, What Haunts Me — and Should Haunt All of NY — About Neonic Pesticides, USA Today Network Papers (Jan. 19, 2023), https://bit.ly/41o6NHt.
[26] Carmichael SL, Yang W, Roberts E, Kegley SE, Padula AM, English PB, Lammer EJ, Shaw GM. Residential agricultural pesticide exposures and risk of selected congenital heart defects among offspring in the San Joaquin Valley of California. Environ Res. 2014 Nov; 135:133-8. https://doi.org/10.1016/j.envres.2014.08.030.
[27]Yang W, Carmichael SL, Roberts EM, Kegley SE, Padula AM, English PB, Shaw GM. Residential agricultural pesticide exposures and risk of neural tube defects and orofacial clefts among offspring in the San Joaquin Valley of California. Am J Epidemiol. 2014 Mar 15;179(6):740-8.https://doi.org/10.1093/aje/kwt324.
[28] Keil AP, Daniels JL, Hertz-Picciotto I. 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. 2014 Jan 23;13(1):3. https://doi.org/10.1186/1476-069X-13-3.
[29] Hafez EM, Issa SY, Al-Mazroua MK, Ibrahim KT, Rahman SMA (2016) The Neonicotinoid Insecticide Imidacloprid: A Male Reproductive System

Toxicity Inducer-Human and Experimental Study. Toxicol open access 1:109. doi:10.4172/2476-2067.1000109

[30]Marfo JT, Fujioka K, Ikenaka Y, et al., Relationship between Urinary N-Desmethyl-Acetamiprid and Typical Symptoms including Neurological Findings: A Prevalence Case-Control Study. PLoS One. 2015;10(11):e0142172. 2015 Nov 4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4633099/.

[31] Gunier RB, Bradman A, Harley KG, Kogut K, Eskenazi B., Prenatal Residential Proximity to Agricultural Pesticide Use and IQ in 7-Year-Old Children. Environ Health, Perspect. 2017 May 25;125(5):057002.

[32] Cimino AM, Boyles AL, Thayer KA, Perry MJ. Effects of Neonicotinoid Pesticide Exposure on Human Health: A Systematic Review. Environ Health Perspect 125:155–162; http://dx.doi.org/10.1289/EHP515.