

VERMONT LAW SCHOOL

May 5, 2015

House Committee on Agriculture and Forest Products
Vermont State Legislature
115 State Street
Montpelier, VT 05633

Re. Support for H.B. 236—Act Relating to the Use of Neonicotinoid Pesticides

Honorable Members of the House Committee on Agriculture and Forest Products,

Thank you for allowing me the opportunity to speak to you today. My name is Rebecca Valentine and I am the Program Officer for Vermont Law School's Center for Agriculture and Food Systems (CAFS). Vermont Law School has the most comprehensive program in agriculture and food law in the country and CAFS' mission is to use a dynamic curriculum to train the next generation of agriculture and food law advocates. CAFS is also a center for advocacy. CAFS faculty and students collaborate with local, regional and national partners to produce legal tools that advance informed policy geared toward improving the food system and its impacts on environment, public health, local economies and food security. On behalf of Vermont Law School and CAFS, I respectfully urge you to support House Bill 236—An act relating to the use of neonicotinoid pesticides. Banning the sale, use and application of these harmful chemicals is a necessary step to protecting our environment and the future of Vermont's agricultural economy.

As others have testified, pollinators play a vital role in maintaining a healthy agricultural economy and stable environment. Bee pollination is directly responsible for one out three bites of food we take.ⁱ In fact, bee pollination has been valued at over \$15 billion, and non-Apis pollination at over \$9 billion,ⁱⁱ meaning that the U.S. agricultural economy has a "continued and significant need" for insect pollination.ⁱⁱⁱ Roughly 275 species of native bees are known to populate Vermont.^{iv} Yet the health and numbers of honeybees, native bees and other pollinating insects are in significant decline. Since 2013, beekeepers have reported losing anywhere from 45 to 65 percent of their hives.^{v, vi, vii} As House Bill 236 notes, Vermont is not immune to pollinator decline. Three of Vermont's 15 species of bumblebees are extinct and another is threatened.^{viii} Over all, one quarter of Vermont's bumblebees are have disappeared or are in serious decline.^{ix}

A rapidly growing body of science decidedly points to neonicotinoids as playing a significant role in bee declines.^x Neonicotinoids or "neonics" are used on over 140 crops and popular garden plants, and sub-lethal exposure to these chemicals diminishes insects' natural tolerance to stressors such as disease, pests and pathogens, and in many cases kill honeybees and other pollinators outright.^{xixii}

In the past two years, the European Union passed a temporary ban on the use of neonics, and the cities of Spokane, Seattle and Thurston County, WA, Eugene and Portland, OR, Shorewood, St. Louis, Andover

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and Stillwater, MN, and Ontario Canada have passed bills limiting the use of neonics, primarily on public property. In August of 2014, Vermont Law School became the first higher education institution to commit to maintaining a neonic-free campus. This accomplishment grew from awareness that pollinators are an important part of the food system, and was achieved through participation in the Bee Protective Campaign, in partnership with the Center for Food Safety and Beyond Pesticides, two prominent environmental advocacy organizations promoting the restriction of neonic pesticide use to strengthen pollinator health. Once Vermont Law School committed to going neonic-free, it was a matter of approximately three months to achieve this goal. CAFS worked directly with the Center for Food Safety to take stock of the chemicals used in Vermont Law School's pest management routine. Each product used on campus was evaluated to ensure that active ingredients did not include neonics. We were pleasantly surprised to find that there were no neonics present in pest management products commonly used on campus. Upon completion of this process, a resolution was signed by CAFS and the head of Buildings and Grounds banning the procurement and use of neonic products, extending to commercial pest management providers.^{xiii}

As a law school founded on principles of environmentalism, Vermont Law was well suited to take on this task. However, I strongly believe that with a proactive approach and access to the necessary tools and information, removing neonic pesticides from a lawn, campus or agricultural pest management routine is a reasonable and very possible goal. Information and resources can be secured from advocacy organizations, state agencies,^{xiv} federal agencies such as the USDA,^{xv} and academic research institutions such as Penn State and UMass Extension.^{xvi} Emory University recently joined us as a neonic-free campus. We hope that other institutions will recognize that it is time for them to participate in protecting our pollinators.

Two studies published in April of this year in *Nature* magazine reinforce this truth. The first, from New Castle University, finds that rather than being repelled by neonics, bees are in fact attracted to food sources contaminated with imidacloprid or thiamethoxam, two popular neonics.^{xvii} The second, conducted by Lund University, finds that neonic-coated seeds pose a substantial risk to wild bee species, and that the "contribution of pesticides to the global decline of wild bees may have been underestimated."^{xviii}

Vermont is deeply rooted in agriculture, and bees and other pollinators are valuable contributors to our agricultural systems. Losing them to manmade, preventable causes will not serve our economy, our environment or our state culture.

Thank you for your time,

Rebecca Valentine
Program Officer, Center for Agriculture and Food Systems
Vermont Law School

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ⁱ Klein et al., Importance of Crop Pollinators in Changing Landscapes for World Crops, *Proceedings of the Royal Society B: Biological Sciences*, 274: 303-13 (2007).

ⁱⁱ Bob Perciasepe and Krista Harden, New Steps to Protect Pollinators, Critical Contributors to Our Nation's Economy, The White House Blog (June 20, 2014) <https://www.whitehouse.gov/blog/2014/06/20/new-steps-protect-pollinators-critical-contributors-our-nation-s-economy>.

ⁱⁱⁱ Nicolas W. Calerone, Insect Pollinated Crops, Insect Pollinators and US Agriculture: Trend Analysis of Aggregate Data for the Period 1992-2009, *PLoS ONE*, (2012). DOI: 10.1371/journal.pone.0037235.

^{iv} Vermont Center for Ecostudies, Bumble Bees in Peril (Dec. 2, 2013) <http://vtcecostudies.org/blog/bumble-bees-in-peril/>.

^v Michael Wines, *Mystery Malady Kills More Bees, Heightening Worry on Farms*, N.Y. TIMES (March 28, 2013) http://www.nytimes.com/2013/03/29/science/earth/soaring-bee-deaths-in-2012-sound-alarm-on-malady.html?pagewanted=all&_r=0.

^{vi} Josephine Marcotty, *Nature's Dying Migrant Worker*, STAR TRIBUNE, <http://www.startribune.com/local/264929101.html?site=full>.

^{vii} Ron Meador, *Honeybee collapse worsens; one Minnesotan's losses run to 65%*, MINNPOST (Apr. 3, 2013) <http://www.minnpost.com/earth-journal/2013/04/honeybee-collapse-worsens-one-minnesotans-losses-run-65>.

^{viii} *Supra* note iv.

^{ix} *Id.*

^x Mullen et al., High Levels of Miticides and Agrochemicals in North American Apiaries: Implications for Honey Bee Health, *PLoS ONE* 5:e9754 (2010). DOI:10.1371/journal.pone.0009754.

^{xi} Henry et al., A Common Pesticide Decreases Foraging Success and Survival in Honey Bees, *Science*, 336: 348-52 (2012).

^{xii} Pettis, et al., Crop Pollination Exposes Honey Bees to Pesticides Which Alters Their Susceptibility to the Gut Pathogen *Nosema ceranae*, *PLoS One*, 8:e70182 (2013). DOI: 10.1371/journal.pone.0070182.

^{xiii} Vermont Law School, Resolution on the Use of Neonicotinoid Pesticides Toxic to Honey Bees and Other Pollinators (2014).

^{xiv} Vermont Agency of Agriculture, Neonicotinoid Pesticides; Safety and Use (2015). Available at: <http://legislature.vermont.gov/assets/Documents/2016/WorkGroups/House%20Agriculture/Agricultural%20Research/W-Cary%20Giguere-Neonicotinoid%20Pesticides;%20Safety%20and%20Use-2-11-2015.pdf>.

^{xv} U.S. Dept. of Agric., Natural Resources Conservation Service, Be a Friend to Pollinators (June 2013). Available at: <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/plantsanimals/pollinate/?cid=stelprdb1142431>.

^{xvi} Penn State College of Agricultural Sciences, Center for Pollinator Research; UMass Amherst, The Center for Agriculture, Food and the Environment.

^{xvii} Kessler, S.C. et al., Bees prefer foods containing neonicotinoid pesticides, *Nature* (2015). DOI: 10.1038/nature14414.

^{xviii} Rundlof, M. et al., Seed coating with a neonicotinoid insecticide negatively affects wild bees, *Nature* (2015). DOI: 10.1038/nature14420.



BEYOND PESTICIDES

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**CENTER FOR
FOOD SAFETY**

Resolution On The Use Of Neonicotinoid Pesticides Toxic To Honey Bees And Other Pollinators

WHEREAS, neonicotinoid pesticides: imidacloprid, clothianidin, thiamethoxam, dinotefuran, acetamiprid, are neurotoxins that impact motor and locomotor activity, and are also associated with reproductive and mutagenic effects;

WHEREAS, the use of neonicotinoid pesticides is associated with lethal and sublethal effects on bees that impair bee foraging patterns, navigating and learning behavior, alter reproductive cycles, impair bee immune systems leading to increased susceptibility to pathogens and reduced colony survival;

WHEREAS, the loss of pollinators is alarmingly high, with annual losses of commercial honey bee colonies increasing by as much as 50 percent since 2006, along with the dramatic decline of other populations of wild bees and other pollinators;

RECOGNIZING, threats to pollinators concerns the entire food system, where pollination services provided by honey bees and other essential pollinators account for one in every three bites of food, responsible for the pollination of commodity crops such as almonds, apples, blueberries and many others, and contributing \$15 billion worth of services to U.S. agriculture;

WHEREAS, the use of neonicotinoid pesticides has been shown to poison birds as well as aquatic organisms;

WHEREAS, the systemic nature of neonicotinoid pesticides gives rise to chemical residues that persist in the environment, translocating through plants to remain in leaves, pollen and nectar, contaminating soil, impacting beneficial soil microorganisms, and contaminating water resources;

WHEREAS, evidence of neonicotinoid resistance among insect pests has been documented leading to resistant insect populations and an increased economic cost to control;

WHEREAS, regulatory approval was granted to neonicotinoid pesticides without adequate review of their impacts to pollinators;

WHEREAS, residential and commercial use of neonicotinoid and other hazardous pesticides on home gardens, public parks, schools, and other local and municipal areas pose unacceptable risk to bees and other pollinators; and,



WHEREAS, the use of hazardous pesticides is not necessary to create and maintain green lawns and landscapes, home or public gardens, or open spaces given the availability of viable alternatives practices and products;

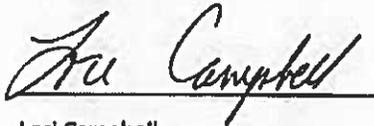
THEREFORE, BE IT RESOLVED THAT:

Vermont Law School will not procure or use neonicotinoid products, or products containing neonicotinoid active ingredients.

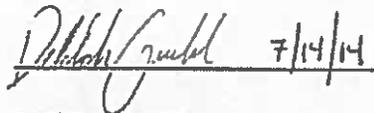
Vermont Law School will ensure that commercial pest service providers provide landscape services that encourage pollinator populations and support pollinator services.

Vermont Law School recognizes the importance of pollinators and their services, and will support efforts to educate the broader community about the action it has taken and encourage other entities and households to adopt a similar policy.

Vermont Law School will endorse efforts to suspend the neonicotinoids clothianidin and thiamethoxam until a proper scientific and regulatory review of the impacts to honey bees and other pollinators is completed.



Lori Campbell
Facilities Operations Manager, Vermont Law School



Dellah Griswold
Program Officer, Center for Agriculture & Food Systems at
Vermont Law School



HELP THE HONEY BEES!



LOOKING TO HELP honey bees and other important pollinators? One of the best ways to support healthy hives and pollinator protection is to provide ample foraging. Keeping a garden that provides not just nectar, pollen, and habitats, but also refrains from using toxic pesticides will go a long way towards helping bees and other pollinators. The most widely used garden insecticides are a class of chemicals called neonicotinoids. Below is a list of common home and garden products containing neonicotinoids. To keep your lawn and garden happy, healthy, and teeming with life for pollinators, you should avoid the following products:

PRODUCT	MANUFACTURER	ACTIVE INGREDIENT (AI)	% AI
12 Month Tree & Shrub Insect Control Landscape Formula	Bayer Advanced	Imidacloprid	2.940
12 Month Tree & Shrub Protect & Feed (Concentrate)	Bayer Advanced	Imidacloprid	1.470
12 Month Tree & Shrub Protect & Feed (Granules)	Bayer Advanced	Imidacloprid	1.100
12 Month Tree & Shrub Protect & Feed II (Granules)	Bayer Advanced	Imidacloprid Clothianidin	0.550 0.275
12 Month Tree & Shrub Protect & Feed II (Granules)	Bayer Advanced	Imidacloprid Clothianidin	0.740 0.370
2-In-1 Insect Control Plus Fertilizer Plant Spikes	Bayer Advanced	Imidacloprid	2.500
2-In-1 Systemic Rose & Flower Care	Bayer Advanced	Imidacloprid	0.220
3-In-1 Insect, Disease & Mite Control (Ready-to-Spray)	Bayer Advanced	Imidacloprid	0.012
3-In-1 Insect, Disease & Mite Control (Ready-to-Use and Concentrate)	Bayer Advanced	Imidacloprid	0.470
All-In-One Rose & Flower Care	Bayer Advanced	Imidacloprid	0.150
All-In-One Rose & Flower Care Granules	Bayer Advanced	Clothianidin Imidacloprid	0.050 0.110
ALOFT® Gc Sc Insecticide	Arysta LifeScience	Clothianidin	24.700
ALOFT® Lc G Insecticide	Arysta LifeScience	Clothianidin	0.250
ALOFT® Lc Sc Insecticide	Arysta LifeScience	Clothianidin	24.700
ARENA® .25 G Insecticide	Valent U.S.A. Corporation	Clothianidin	25.000
ARENA® 50 WDG Insecticide	Valent U.S.A. Corporation	Clothianidin	50.000
Complete Brand Insect Killer For Soil & Turf (Granules)	Bayer Advanced	Imidacloprid	0.150
Complete Brand Insect Killer For Soil & Turf (Ready-to-Spray and Concentrate)	Bayer Advanced	Imidacloprid	0.720
Criterion™ 0.5 G	Bayer Environmental Science	Imidacloprid	0.500
Criterion™ 2F Insecticide	Bayer Environmental Science	Imidacloprid	21.400
Criterion™ 75 WSP Systemic Insecticide	Bayer Environmental Science	Imidacloprid	75.000
DIY Tree Care Products Multi-Insect Killer	ArborSystems	Imidacloprid	5.000
Dual Action Rose & Flower Insect Killer	Bayer Advanced	Imidacloprid	0.012
Ferti-lome® 2-N-1 Systemic	Voluntary Purchasing Groups, Inc.	Imidacloprid	0.150
Flagship™ 0.22 G	Syngenta Crop Protection, LLC	Thiamethoxam	0.220
Flagship™ 25 WG	Syngenta Crop Protection, LLC	Thiamethoxam	25.000
Fruit, Citrus & Vegetable Insect Control	Bayer Advanced	Imidacloprid	0.235
Green Light® Grub Control with Arena® Insecticide	The Scotts Company	Clothianidin	0.250
Green Light® Tree & Shrub Insect Control with Safari® 2 G Insecticide	The Scotts Company	Dinotefuran	2.000

PRODUCT	MANUFACTURER	ACTIVE INGREDIENT (AI)	% AI
Hi-Yield® Systemic Insect Spray	Voluntary Purchasing Groups, Inc.	Imidacloprid	1.470
Hunter .5 G Insecticide	Bayer Corporation	Imidacloprid	0.500
Hunter 75 WSP Insecticide	Bayer Corporation	Imidacloprid	75.000
Knockout Ready-to-Use Grub Killer Granules	Gro Tec, Inc.	Imidacloprid	0.200
Lesco Bandit 2F Insecticide	Bayer Environmental Science	Imidacloprid	21.400
Lesco Bandit Insecticide 0.5 G	Bayer Environmental Science	Imidacloprid	0.500
Lesco Bandit Insecticide 75 WSP	Bayer Environmental Science	Imidacloprid	75.000
Mallet® 0.5 G Insecticide	Nufarm Americas Inc.	Imidacloprid	0.500
Mallet® 2 F T&O Insecticide	Nufarm Americas Inc.	Imidacloprid	21.400
Mallet® 75 WSP Insecticide	Nufarm Americas Inc.	Imidacloprid	75.000
Marathon® 1% Granular	OHP, Inc.	Imidacloprid	1.000
Marathon® 60 WP	OHP, Inc.	Imidacloprid	60.000
Marathon® II	OHP, Inc.	Imidacloprid	21.400
Maxide® Dual Action Insect Killer Concentrate	Gulfstream Home and Garden	Thiamethoxam	0.400
Maxide® Dual Action Insect Killer Granules	Gulfstream Home and Garden	Thiamethoxam	0.200
Meridian® 0.33 G	Syngenta Crop Protection, LLC	Thiamethoxam	0.330
Meridian® 25 WG	Syngenta Crop Protection, LLC	Thiamethoxam	25.000
Merit® 0.5 G	Bayer Corporation	Imidacloprid	0.500
Merit® 2 F	Bayer Corporation	Imidacloprid	21.400
Merit® 75 WP Insecticide	Bayer Corporation	Imidacloprid	75.000
Merit® 75 WSP Insecticide	Bayer Corporation	Imidacloprid	75.000
Merit® Tree Injection	Bayer Environmental Science	Imidacloprid	17.100
Monterey Once A Year Insect Control	Lawn and Garden Products, Inc.	Imidacloprid	1.470
Monterey Once A Year Insect Control II	Lawn and Garden Products, Inc.	Imidacloprid	1.470
Ortho® Bug B Gon® Year-Long Tree & Shrub Insect Control	The Scotts Company	Imidacloprid	1.470
Ortho® Flower, Fruit & Vegetable Insect Killer	The Scotts Company	Acetamiprid	0.006
Ortho® MAX® Tree & Shrub Insect Control Ready-to-Spray	The Scotts Company	Imidacloprid	1.470
Ortho® Rose & Flower Insect Killer	The Scotts Company	Acetamiprid	0.006
Safari 2 G Insecticide	Valent U.S.A. Corporation	Dinotefuran	2.000
Safari 20 SG Insecticide	Valent U.S.A. Corporation	Dinotefuran	20.000
Season Long Grub Control Plus Turf Revitalizer	Bayer Advanced	Imidacloprid	0.250
Season-Long Grub Control	Bayer Advanced	Imidacloprid	1.470
Surrender® GrubZ Out	Control Solutions, Inc.	Imidacloprid	0.500
Termite Killer Granules	Bayer Advanced	Imidacloprid	0.370
Transtect™ 70WSP Insecticide	Rainbow Treecare Scientific Advancements	Dinotefuran	70.000
Xytect™ 2F Insecticide	Rainbow Treecare Scientific Advancements	Imidacloprid	21.400
Xytect™ 75WSP Insecticide	Rainbow Treecare Scientific Advancements	Imidacloprid	75.000
Xytect™ Infusible	Rainbow Treecare Scientific Advancements	Imidacloprid	5.000
Zylam® 20 SG Systemic Turf Insecticide	PBI/Gordon Corporation	Dinotefuran	20.000

LIST MAY NOT INCLUDE ALL HOME AND GARDEN PRODUCTS CONTAINING NEONICOTINOIDS

NATIONAL OFFICE: 660 Pennsylvania Avenue, SE, Suite 302, Washington, DC 20003

CALIFORNIA OFFICE: 303 Sacramento St., 2nd Floor, San Francisco, CA 94111

NORTHWEST OFFICE: 917 SW Oak Street, Suite 300 Portland, OR 97205

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