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Testimony re: SB 268: Pesticide Regulation – Transfer to Department of the Environment
Submitted to: The Senate Education, Health and Environmental Affairs Committee
Submitted: Luke Goembel
Position: Support

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Dear Chairman Pinsky, Vice Chair Kagan and members of the committee

I have a Ph.D. in chemistry and I've worked for organizations such as the Army Material Systems Analysis Activity, NASA's Laboratory for Extraterrestrial Physics, and The Johns Hopkins University Applied Physics Laboratory. I'm also a beekeeper and have served three terms as an officer of the Central Maryland Beekeepers Association, currently serve as a member of the Board, have published articles in *American Bee Journal*, have served as a panelist at a Congressional Briefing on pesticides and pollinators, and have spoken at the White House Council on Environmental Quality.

I am providing testimony based on my expertise as a scientist and as a beekeeper. From both perspectives, I strongly urge passage of SB 268 to ensure pesticide regulation is under the auspices of the Maryland agency charged with protecting the health of people and our environment. **It is important to understand that the EPA does not "approve" pesticides but rather registers them on a risk/benefit ratio… the benefit to the industry and its ability to effectively address pest and weed pressures vs the risks to the health of people, pollinators, drinking water, waterways and the environment**, as a whole. This subjective exercise allows for a lot of 'wiggle room'. What seems an appropriate risk/benefit ratio analysis of a pesticide use for North Dakota is not necessarily appropriate for Maryland.

As a scientist, I understand why FIFRA ensures that state agencies can go beyond EPA's registration of pesticides. In my meetings with EPA personnel, conversations with retired EPA scientists, and familiarity with lawsuits against the agency's approval of increasingly more environmentally harmful pesticides and their use, combined with my knowledge of the current science on pesticides and pollinators, it is clear to me that in order to assure Maryland has a safe environment for people, pollinators, and other life forms we depend on, **Maryland must do what is allowed by FIFRA: Maryland can and *must* perform their own risk/benefit assessment based on current science**. Agency decisions must be based on what Marylanders need and not muddled by politics nor a 'revolving door policy' with those they are supposed to regulate.

MDA does not have staff with public or environmental health backgrounds dedicated to ensuring environmental risks are considered, when registering pesticides manufacturers submit to MDA's chemist. Other states, where pesticide oversight is not under a Dept. of Agriculture, have taken steps to further restrict and even ban certain EPA-registered pesticides that they have assessed pose a threat to health, including pollinator health.

In any risk/benefit analysis on pesticides used in our state**, we must consider their role in**

- **the nearly 50-fold increase in the toxicity of the environment to bees[1],**
- **a 75% reduction in the biomass of flying insects over the past three decades[2],**
- **a 30% reduction in the population of birds[3], and**
- **the fact that Maryland beekeepers lose one-third to one-half of their hives each year[4], as compared to much lower losses (~10%) in past decades.**

The Maryland Department of Agriculture (MDA) does not have the expertise to oversee pesticide regulation. They lack scientific expertise on toxics, the environment, and health.

My own experience as a beekeeper has underscored that Md. Dept of the Environment, rather than MDA, would be best suited to assess which pesticides may need to be further restricted, based on the science that they threaten pollinators. For example:

1) In 2016, I was invited to participate in the Maryland Managed Pollinator Protection Program (MP3) Summit – a stakeholder meeting planned and hosted by the MDA to make decisions on how to improve survival for pollinators in Maryland. To my surprise, most of the stakeholder's present were pesticide company executives and pesticide users, resulting in the majority of participants deciding that pesticides have little to do with our devastating annual hive losses.

2) MDA opposed the Pollinator Protection Act of 2016 and ignored the breadth of research that has shown a clear link between the alarming pollinator losses we are experiencing in the state and pesticide exposures. I give details of the MDA's MP3 flawed process in "Beekeeping Stakeholder," published in *American Bee Journal* [attached].

3) After the Pollinator Protection Act was implemented in 2018, members of Central Maryland Beekeepers Association found retailers were still selling consumer neonic-containing products for two years after the ban went into effect. We shared this information with MDA. We later learned that MDA was allowing for a loophole in the law, whereby retailers who had Restricted Use Pesticide licenses could also continue to sell these products to consumers—even though consumers are forbidden by the law to use them. Over 350 Maryland beekeepers signed on to testimony to support the bill last year to close this loophole. Beekeepers are grateful to this committee and the Maryland General Assembly for passing this corrective law in 2021.

These examples are why we need an agency whose primary expertise is scientific, regarding toxic impacts on the health of the environment and people.

As both a scientist that has observed some of the gaps in MDA's scientific understanding and references over the years and as a long-time beekeeper, I urge a favorable report on SB268.

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Here's my backstory. I started keeping bees because I wanted to make mead and I thought honey was expensive. Beekeeping would be a cheap way to get honey. Yes, I was that clueless. I take beekeeping pretty seriously now, though. I've won a blue ribbon at the Maryland State Fair for my beetle-trapping bottom board. I've given talks to bee clubs about the fairly successful methods I use for keeping bees ("7 years from 2 packages"). In spring of 2015, after six seasons of healthy hives and abundant honey harvests, the foragers from all of my hives were suddenly absent. After some investigation, the cause became clear: hyperactive, for-hire mosquito extermination services that were saturating my suburban neighborhood with a pyrethroid (with microencapsulation technology that combines long lasting residuals with a powerful knock-down for all of your bee and mosquito killing needs).[1] My neighbors and I were flooded with advertisements that announced our backyards were now a battleground for the war against insects. The exterminators claimed that, by eliminating insects, they would "make outside fun again". Clearly, my insects had become a casualty in their war of extermination. I contacted the Maryland State Department of Agriculture (MDA) to see what I could do to prevent the continued loss of my bees. The gist of the State's answer: "there is nothing you can do to save your bees unless new laws are passed." Fully invigorated, I put a sign up outside my house (see below) and joined my local beekeeper's association. At my second or third club meeting, I offered my services to the Chair of the Legislative Committee of the Central Maryland Beekeeper's Association (CMBA).

Bonnie Raindrop, the Chair, thought that my experience as a chemist might come in handy. She arranged for me to be a beekeeping stakeholder at the upcoming MP3 (Maryland Managed Pollinator Protection Plan) summit. I was entirely ignorant of the stakeholder process, so I asked my retired Air Force officer friend

Pyrethroid sprayer, killing those pesky bees and other beneficial insects.

Immediate action was warranted.

about it. Apparently, it exists to give the illusion of democratic process to a rigged system.

On the morning of January 19, 2016, I put on my suit and tie and traveled with Bonnie to the MP3 Stakeholder Summit at the University of Maryland in College Park. In the summit's Final Report, a picture of the back of my head appears on page 6.[2] The MDA has demonstrated near-Soviet-style efficiency in removing any evidence of my presence from their published list of participants[3], but they slipped up by neglecting to remove my image from some of the pictures they have published. Clearly I am a troublemaker, as I will go on to prove. After arriving at the University of Maryland, Bonnie introduced me to a number of participants she knew. I noticed "Keystone Policy Center" was written on everything. Someone at the summit volunteered that Keystone was paid $40,000 to produce, manage, and evidently process information from the one-day summit. What is this Keystone organization? I decided to team up with a fellow chemist in the CMBA, Master Beekeeper Steve McDaniel. With a little digging, we found that Keystone is a non-profit that is supported financially (at least in part) by Monsanto, DuPont, Dow Chemical, and General Mills. Monsanto's Vice President of Stakeholder Engagement sits on Keystone's Board of Directors.[4] Why would this have any bearing on the production of Maryland's MP3? Keystone, funded by and scrutinized by pesticide manufacturers and users, has a vested interest in seeing that their donors and Board of Directors are pleased. Limits on pesticide use are unlikely to please manufacturers and users.

By what means were stakeholders chosen? The composition of MP3 participants gives more evidence of how the process was rigged in favor of those who have a vested interest in denying that insecticides harm pollinators: beekeepers were outnumbered by non-beekeepers about *six to one*. The majority of stakeholders were representatives of insecticide manufacturers and users. Notable pro-insecticide stakeholders included: Deputy Director of State Government Relations for Bayer, Regulatory Affairs Manager for Bayer CropScience, Director of Government Affairs for ScottsMiracle-Gro Company, Pollinator and IPM Stewardship Lead for Syngenta, Vice President for Government and Regulatory Affairs for the American Seed Trade Association, and Chief Industry Relations Officer for the National Pest Management Association. The full list of stakeholders is telling.[3] It is hard to find any stakeholder, other than the few beekeepers, that might be of the opinion that insecticides aren't wonderful for pollinators. Perhaps the stakeholder from the Wildlife Habitat Council would have an open mind about limits on pesticides. No, I doubt it: a little digging reveals their dues-paying corporate members include Bayer, DuPont, and Monsanto.[5] Stakeholders were given assigned seats at tables. At an attempt at fairness (or, perhaps, to divide and conquer) they distributed beekeepers about one-to-a-table. However, it was tricky to sort some of the beekeepers from the pesticide industry cheerleaders. One attendee once represented 6,000 pest control companies worldwide. She also listed herself as a "backyard beekeeper." Another stakeholder was introduced to me as a stakeholder for Maryland nursery growers (vociferous proponents of unlimited systemic insecticide use). He then volunteered that he was a fellow beekeeper! He noted that he keeps losing his hives "due to Varroa mites, not pesticides." I then asked how he knew his hive losses were not due to pesticides. He revealed that subordinates of today's featured speaker, a Monsanto associate with an entomology degree, told him so.

The author, labeled "Beekeeper," was an invited stakeholder at the Maryland MP3 Summit.

Well, I was feeling a little discouraged by this all, but there was free coffee and snacks to cheer us up, so I sat down at my table and started chatting with my fellow stakeholders. Then the show began. The assistant to the Secretary of the MDA spoke and informed us "there is no money available for implementing anything in the MP3." What? $40,000 for Keystone to run this show, but not one cent for the Managed Pollinator Protection Plan! Now, as a scientist who understands no-funding versus funding, I figured we should just all get up and leave after that announcement, but, in keeping with the surreal nature of the whole process, nobody moved. Things got even stranger. An associate of Monsanto (who is also an assistant to a professor at U. of Md.) gave a dramatic presentation: "Drivers of pollinator health decline."[6] It was filled with moving images of exploding atomic bombs and a photograph of a baby photoshopped to look like a vampire. He argued that beekeepers, not insecticides, were responsible for the current dismal survival rate of honeybee colonies in Maryland. The single other researcher who spoke claimed, in a sort of a mumble, that native bees were even more resistant to pesticides than the honey bee. This contradicts current research that indicates native bees are harmed even more than the honey bee by at least one class of pesticides.[7, 8] No other researchers spoke. No mention was given of the vast and growing body of evidence that insecticides are harmful to pollinators, even when used as directed. What was going on here?

After the two "insecticides don't harm pollinators" researchers gave their presentations we were asked to discuss assigned topics amongst other stakeholders at our table. Keystone employees and subordinates of the Monsanto associate were assigned to our table directed us in our discussions. We kept in mind that nothing we suggested would be funded, that insecticides don't harm insects, and that Varroa mites are what are killing the bees. Now thoroughly aware that I was at a convention of pesticide cheerleaders, I braced myself and mentioned that a company that makes "outside fun again" killed my bees. That comment seemed to rub another stakeholder, the *President of the Maryland State Pest Control Association*, the wrong way. He warned me that I better watch what I was saying because that company has "deep pockets." I then stated that I'm not afraid of the company that makes outside fun again, and looked toward a subordinate of the Monsanto associate (she was taking notes for our group) and said: "Write that down. Luke says he's not afraid of [that fun again company]!" Clearly I'm not making a lot of friends at this summit.

At some point the stakeholders were asked by Keystone to vote with some sort of remote control voting device on a variety of questions that appeared to be carefully crafted, along with the rest of the summit, to assure that bee-harming insecticides would be used in abundance from now until eternity. Then the summit was over. The suits were all shaking hands with each other and smiling and back patting to mark the end of another job well done. "Good to see you, Joe. I guess we'll get together at the MP3 in Alaska later this summer. Why don't you bring the wife this time. Let's budget a fishing trip." Stakeholders weren't here to protect pollinators. Stakeholders were here to protect the pesticide producers and users.

The resulting Maryland Pollinator Protection Plan is worthless: beekeepers are to blame for their economically unsustainable losses, nothing is said about non-honey bee pollinators, and there is nothing actionable to come out of it. Most importantly, contrary to all evidence that pesticides play a significant role in harming pollinators, pesticides are found blameless in Maryland's MP3. There was a public comment period for the MP3, and plenty of beekeepers commented, but no comments have been released to the public. I doubt comments were even read. We can all rest assured that Maryland is getting what big Ag, the pesticide industry, and their cheerleaders want. Still not convinced the MP3 process is rigged to give the

pesticide industry exactly what it wants? I recently found out that the entire national network of Managed Polinator Protection Plans is organized and overseen by the CEO of The National Association of State Departments of Agriculture, who is also the former Vice President of Croplife America, the national trade association that represents the manufacturers, formulators and distributors of pesticides.[9] The Maryland MP3 is a splendid example of the new Golden Rule in America: Those with the Gold, Rule.

Now I present an uplifting experience almost opposite that of being a stakeholder for the MP3. I was one of the beekeepers (and many others) who worked hard to pass the Maryland Pollinator Protection Act of 2016. To understand the reason for the Act, and the reason that many beekeepers supported it, some background might be needed. Neonicotinoids ("neonics") are a fairly new class of potent systemic insecticides. Systemics become part of the plant, retain their killing power for months, and cannot be washed off. In just a few decades, these broad-spectrum, wonderfully potent, effective neurotoxins have grown from unknown to become one-third of all insecticides sold worldwide. There is no need to spray your plants – just coat the seed, or if you decide to spray, one application is all you need! One and done. However, the very properties that make them so effective at killing "bad" insects make them effective at killing "good" insects such as bees, as is detailed in a meta-study of 1,121 published peer-reviewed studies.[10] Because of their demonstrated harm to the environment (especially their harm to pollinators), neonicotinoids have been at least partially banned in Europe and Canada. Peer-reviewed scientific studies confirm that neonics are undoubtedly harming honey bees and other pollinators. By their own admission, Bayer CropScience studies show adverse effect in bees at just 4 times the levels "usually" seen in plant residues.[11] Non-industry researchers have found that the neonic imidacloprid, even when used as the manufacturer recommends, is in pollen, nectar, and in droplets ("guttation drops") that form on plants in concentrations high enough to cause sublethal effects. Sublethal effects include impairment of navigation, foraging behavior, feeding behavior, drone sperm count, and olfactory learning performance.[12,13,14,15,16,17]

Honey bees have also been outright killed, en masse, by agricultural neonic application.[18] The insecticide industry and their cheerleaders generally claim that the only way a beneficial insect (e.g. honey bee) can be killed by a neonic is if "it wasn't used as directed." In my experience, "used as directed" is fantasy. I have seen trained, professional pesticide applicators ignore the directions on EPA approved labels. Applicators spray open blooms, spray when pollinators are present, spray out into streets that drain into waterways, and so on, without risk of discipline. As the MDA proved to me when I reported my bee kill, a professional insecticide applicator need only say "I didn't see any pollinators" (with their fingers crossed behind their back) to avoid punishment after they spray flowers, bushes, and trees filled with foraging pollinators. No spray, no pay.

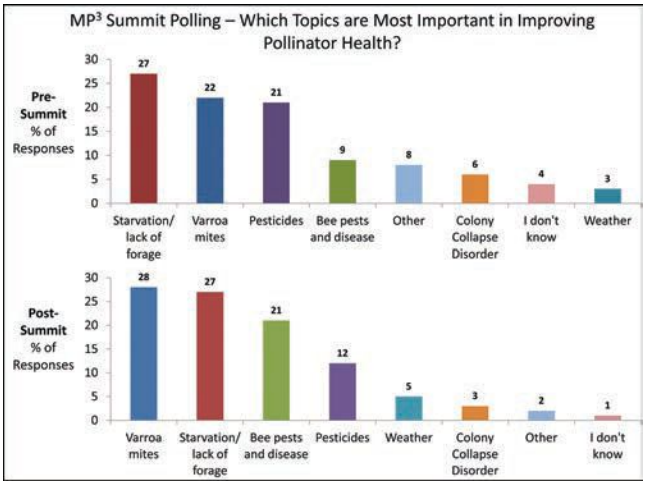
So what happens when a well-intentioned but uninformed consumer purchases a $9.97 container of Bayer Rose and Flower Care? The product is mostly fertilizer, but it is laced with one/fifth of an ounce (5 grams) of the extremely effective bee-killing neonic imidacloprid. Even if a miniscule *one-millionth* of the neurotoxin in that container makes it to honey bees in the form of pollen, nectar, guttation drops, or water gathered from the contaminated ground, that would be enough toxin to cause colony-threatening sub-lethal effects for 1 million honey bees. Imagine the bee-killing potential of thousands of such containers sold statewide. Consider also the synergistic effect of neonics combined with other classes of pesticides, herbicides, and moldecides that our bees are exposed to.[19]

The Maryland Pollinator Protection Act of 2016 would reduce pollinators' exposure to neonics through a statewide ban on their sale to, and use by, consumers for things such as lawn and garden care. Below is a picture of the button beekeepers and others wore to promote the passage of the Maryland Pollinator Protection Act of 2016.

The Maryland Department of Agriculture and others aligned with the unfettered use of insecticides fought against the Act. Beekeepers took time away from day jobs to participate in hearings, talk to State legislators, and be present whenever the bill came up for a vote. Here is an example of what we were up against: at the House of Representatives hearing for the bill, the MDA presented a poll taken of the stakeholders at the MP3 summit as evidence that beekeepers are just a bunch of ignorant, hysterical whiners. The poll indicates that after the presentation, "Drivers of pollinator health decline", only 12% of stakeholders thought that pesticides were an important topic in improving pollinator health. What does a poll of mostly pesticide makers and their cheerleaders tell us about the relative importance of various stressors for bees? It tells us more about the makeup of the stakeholders and the propaganda effect of the Monsanto associate's presentation than anything else. After seeing the chart, one well-educated legislator addressed the MDA speaker and said something to the effect of "We request that you don't present what amounts to nothing more than a Facebook poll as if it were science." Things were looking up. Beekeepers had found a forum where people with the means to improve things for pollinators were willing to consider the facts and decide if the pesticide industry propaganda, fantasy, and obfuscation reflect reality. It made me proud to be a Marylander.

Other groups with concerns about the effect of insecticides on pollinators joined beekeepers in efforts to pass the bill. In fact, Ruth

Button worn by supporters of the partial ban on neonicotinoids in Maryland.



The Maryland Department of Agriculture "proves" insecticide exposure isn't an important topic.

Berlin of the Maryland Pesticide Education Network was expert at navigating the ins and outs of the State legislature, expert at finding other groups to join the beekeepers, and was the prime mover in bringing the bill from infancy to passage. After months of effort by dedicated beekeepers and others, the bill passed with bipartisan support and the majority of votes needed to override a gubernatorial veto. The Governor chose wisely and did not veto the bill. The new Golden Rule certainly benefits the insecticide industry through their revolving door policy with government agencies, their buying and paying for scientists and politicians, their pervasive lobbying and propagandizing, and their marginalizing those who dare to speak against the industry's party line. However, I have found that they have chinks in their armor. When I talk to people about the things I've written about here, they get it. People don't like to be played for fools. It is an American tradition to bow to no ruler. When we join forces and put our minds to it, even us lowly beekeepers can beat those who will stop at nothing to retain their power and make a buck regardless of the long-term consequences.

Left to right: beekeeper Bill Castro, Senator Shirley Nathan-Pulliam, beekeeper Richard Ochs, and the author in front of the Maryland State House in Annapolis. Not shown, the many other Maryland beekeepers, legislators, and others that fought valiantly for the bill.

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