



5th August, 2024

Ms. Kim Wilson, JP, MP
The Minister for Health

Sent by email: knwilson@gov.bm

Dear Minister Wilson

We are grateful for the opportunity to make a submission in response to the public consultation on Pesticide Regulations in Bermuda. It must be said at the outset, that there is a deep concern that the vital progress needing to be made in this critically important area of health will be reduced given the statement made that foresees that 'the limitations of current resources (which) will mean that only one or two sets of regulations will be pursued at this time'.

Bermuda's Pesticide Safety Act 2009 has been without supporting regulations for some 15 years now, save for some put in place for the importation of pesticides, meaning that there are no regulations in force for the other areas outlined in the Act. Those areas being:

- Sale of Restricted Use Pesticides
- Application of Pesticides
- Pest Control Businesses
- Transportation, Handling, Storage and Disposal of Pesticides
- Enforcement
- Miscellaneous (including reporting of accidents involving pesticides, the keeping of records, register of pesticides and training)

By the end of this submission, we hope to have provided a point of view for an order of priority for the development and implementation of outstanding regulations, but this is problematic given the interconnectedness and interdependencies within the system needed to effectively balance the need for, or use of, pesticides in Bermuda with the threats to the environment.

First, I would like to provide some background to our submission, some of which you may remember having received before. Between 2015 and 2017, we did share some of this with you, as well as with other Government Ministers, with members of the Opposition and with the public in different ways.

In 2013, a group was formed to work in collaboration with the Bermuda Environmental Sustainability Taskforce (BEST) to consider the causes of the local and global die-off of honeybees. The group was known as The BUZZ and our work ended up focusing on one of the threats to the bees, which was coming from the use of pesticides, including the group of 'systemic' pesticides that includes:

- (i) the 'family' of neonicotinoids and
- (ii) any formulation containing glyphosate, the active ingredient in pesticides like RoundUp and Rodeo.

From our research, it seems likely to us that those systemic chemicals, which are absorbed by the plant, would be a danger to human health as well as to the targeted pests. In was, in fact, a local farmer who alerted us to the dangers of products containing glyphosate.

We urge the Government of Bermuda to begin this effort by establishing a vision for our country as it relates to *how, when* or even *if* we need to use toxic chemicals (like pesticides) within the eco-system of our small island home. Such a vision would ideally be built on a foundation that embraces an approach based on the Precautionary Principle:

"If an action or policy has a suspected risk of causing harm to the public, or to the environment, in the absence of scientific consensus that the action or

policy is not harmful, the burden of proof that it is not harmful falls on those taking that action.” (Wikipedia)

A next step could be to consider how we can make/effect any reduction in the use of pesticides, given the overwhelming evidence of negative impacts from them on human and environmental health. One way to accomplish this would be for us to consider creating and formally adopting ***an Integrated Pest Management (IPM) Policy and Program*** as a way to consider and employ alternative options for the management of weeds and pests in Bermuda. Reducing our dependence on toxic products (like pesticides) will also help to address the resistance that both pests and weeds inevitably develop to these products. For instance, jurisdictions that have been heavy users of the weedkiller Roundup have now had to incorporate the use of yet another (Monsanto/Bayer) product (Dicamba) to counteract weed resistance.

Key elements of an IPM would provide for:

- Monitoring of pesticide impacts
- Approval of alternative weed control processes, including the option of mechanical means of removing weeds (which could potentially be made part of a rehab program for non-violent offenders in the prison system or as part of a community service program)
- Public education
- A communication plan and stakeholder input.

Over the past few years, the island of St Helena in the south Atlantic (another British Overseas Territory) has been successful in developing and implementing an island-wide IPM program. We had the opportunity to speak with key staff in St Helena and have reviewed their policy. We are attaching a version that we redrafted for Bermuda so that our government can see what might be involved. We feel confident that the Government could get some guidance from St. Helena as it works on Bermuda’s own program.

As mentioned previously, The BUZZ made a number of submissions to a variety of Government Ministers between 2015 and 2017 without receiving a response from any of them. We have, therefore, no sense of how those

submissions were viewed by them. We are hopeful that the current public consultation opportunity might represent a renewed interest in strengthening protections to human and environmental health at risk from the use and abuse of pesticides.

What follows are the questions and concerns that arose during our work and research, grouped under the headings of the Sections covered in the PSA 2009; an approach which we hope makes sense:

1. Importation:

a. While this is the only part of the Pesticide Safety Act 2009 that did have regulations put in place, we feel it should be revisited within the current initiative to make any necessary changes, particularly given an approach based on a precautionary approach and in support of an IPM.

b. What value might there be to consolidating the importation and distribution of all toxic products (like pesticides) through the existing Government Marketing Centre, although we would suggest a more fitting name like the Bulk Importation and Distribution Depot ('BIDD'), so that they are the only importer and distributor into the island? This would:

- (i) make it more possible to track every toxic product being brought in, sold and used on the island
- (ii) allow for other controls to be put in place and meaningful reports generated, and
- (iii) allow for monitoring of where training of users is needed.

c. Given the worldwide concern with the systemic pesticides (including RoundUp and Rodeo, what attention has been paid to other 'systemic', pesticides like neonicotinoids? Of particular concern is Imidacloprid, which we were told is being used in Bermuda and might appear under the brand names of Kohinor, Admire, Advantage, Gaucho, Merit, Confidor, Hachikusan, Premise, Prothor, and Winner.

d. A Government presentation on January 12, 2017, included three slides entitled Pesticide Imports to Bermuda. The slides show the pesticides that are Restricted, Prohibited and Approved:

- 22 pesticides were listed as Restricted i.e. these active ingredients are restricted due to environmental or health concerns related to the percentage of active ingredient in the product, the packaging of the product, the formulation of the product, or the intended end use (location) of the product.
- 35 pesticides were listed as Prohibited, i.e. these active ingredients are prohibited from importation due to environmental or health concerns.
- 6 pesticides were shown as Approved.

At the time that information was provided (during the presentation), it differed significantly from the Prohibited Pesticide List available on the Government website, in that the website only presents prohibited and restricted pesticides, and only lists 16 restricted pesticides and 20 prohibited pesticides. We are wondering if this is still the case.

Is the correct version (of these lists) comprehensive in terms of addressing all of the pesticides that enter and are used in Bermuda? If not, why not?

Having clear definitions or descriptions of Restricted, Prohibited and Approved pesticides would be helpful. Also:

- What policy and/or practice is used to make the decision as to the appropriate category chosen?
- How is a decision to approve or deny justified?
- What changes to these lists have occurred over time and why?
- Is the information accessible to the public?

e. From the many scientific reports published around the world in recent years, we are alarmed to learn that of all the chemicals contained in a

'formulation' of a pesticide, it is only the active ingredient (eg. glyphosate in RoundUp) that is subject to testing and regulation. The so-called 'inert' ingredients that make up the balance of the formulation (as much as 98%) are untested and unregulated. For example, the revelation that one of the co-formulants in RoundUp (and Rodeo), POE-tallowamine, is of real concern and suggests that the singular focus on the active ingredient, glyphosate, served to divert the world's concern and attention. The public is entitled to have this type of information. See:

<https://www.sciencedirect.com/science/article/pii/S0278691519301814>

Summary:

Glyphosate is the active ingredient in glyphosate-based herbicides (GBHs). Other chemicals in GBHs are presumed as inert by regulatory authorities and are largely ignored in pesticide safety evaluations. We identified the surfactants in a cross-section of GBH formulations and compared their acute toxic effects. The first generation of polyethoxylated amine (POEA) surfactants (POE-tallowamine) in Roundup are markedly more toxic than glyphosate and heightened concerns of risks to human health, especially among heavily exposed applicators.

Beginning in the mid-1990s, first-generation POEAs were progressively replaced by other POEA surfactants, ethoxylated etheramines, which exhibited lower non-target toxic effects. Lingering concern over surfactant toxicity was mitigated at least in part within the European Union by the introduction of propoxylated quaternary ammonium surfactants. This class of POEA surfactants are ~100 times less toxic to aquatic ecosystems and human cells than previous GBH-POEA surfactants. As GBH composition is legally classified as confidential commercial information, confusion concerning the identity and concentrations of co-formulants is common and descriptions of test substances in published studies are often erroneous or incomplete. In order to resolve this confusion, laws requiring disclosure of the chemical composition of pesticide products could be enacted. Research to understand health implications from ingesting these substances is required.

2. **Sale:**

a. What value might there be to restricting the retail sale of toxic products (even like pesticides sold as bug sprays etc.) directly to homeowners, making them only available through the central depot BIDD where personnel would be trained and licensed to advise on the proper use of these products? This would mean that they would no longer be available at nurseries or hardware stores (like Masters and Gorhams) where personnel may or may not be asked or indeed able to provide advice and oversight. This could also assist in the control of misinformation when, for example:

- a person at public meeting stated that RoundUp is not a 'systemic' pesticide, or
- where one person states that systemic pesticides should not be used on food plants/crops, whereas a farmer states that you can use it on food plants as it ceases to be toxic by the time the edible fruit/veg is consumed.

3. **Application:**

a. What are the unintended consequences when the concentrated forms of toxic chemical products aren't properly diluted, or when the user doesn't follow (or even closely read) the instructions provided?

b. What chemical products are being used now in public areas in Bermuda? We no longer have a sense of the current levels of use of RoundUp or other systemic pesticides in Bermuda. Can you confirm that no RoundUp is being sprayed in public spaces like children's playgrounds, hospital grounds, nurseries and schools, old people's homes, parks, railway trails, roadsides?

c. How can neighbourhoods/residents 'opt out' of their areas being sprayed, due to concerns around exposure?

d. The public should know where chemicals are being applied and by whom. Whenever chemical pesticides have been sprayed in any public space, signs informing of the duration and level of risks from spraying should be posted somewhere, somehow.

4. **Transportation, Handling, Storage, Disposal:**

We suggest that all toxic chemical pesticides be stored at the same BIDD until procured under a regulated system. Further, all unused pesticides/containers should end up back at the BIDD so that they can record particulars of what is being disposed of and then properly dispose of the remaining liquids/granules or containers. We say 'end up back at the BIDD' so that, for convenience sake, the Tynes Bay Waste Facility may continue to be the central place for members of the public to actually drop the products/containers, but then for them to be conveyed over to the BIDD.

5. **Enforcement:**

Recognizing the general ineffectiveness of conventional attempts at enforcement of policy infractions, who will be responsible for developing creative ways to communicate the new vision and to encourage public participation and adherence to policies?

6. **Miscellaneous** (including reporting of accidents, recording keeping, training:

In terms of record-keeping, every commercial user (including farmers) should have to file a notice of use (it can be brief) giving the location; reason for use; rate of application; and the total amount used. This information should be on a public database and there should be penalties for not filing. In anticipating claims about having to do this, it could be an app on a phone to make it easy. It could be tied to a GIS system so people could see the data easily and incentives considered to encourage compliance.

7. **Additional: Education:**

a. Members of the Bermuda public must be able to make informed purchasing decisions around toxic chemical products, but often there is a sense that if something is simply available 'for sale', then that means that it is 'safe'. What is the commitment to providing general education around safer alternative products to complement the controls that will be put in place with

respect to toxic products (like pesticides) that are to be available for sale and use in Bermuda?

In her book 'Silent Spring', Rachel Carson argues "*that people are vulnerable to pesticides not just because the chemicals are dangerous but also because chemical companies and governments have done little to educate the public about the danger. Studies have shown that most Americans are ignorant of pesticides' ability to poison or cause disease, even as they use them in their homes and gardens*".

We are attaching a copy of a document with facts about pesticides under the heading of 'Better Safe than Sorry!'

b. We believe that part of any strategy would need to include educating and inspiring the public. As no change of policy can rely on enforcement alone, and so, at a minimum we recommend developing Public Service Announcements and engaging our young people to spread the word via social media. We need to 'inform and inspire' for meaningful, long-lasting change.

8. Additional: Health:

a. How can we be educated about 'bio-accumulation' where health is further threatened by the multitude of toxic chemicals in use simultaneously?

b. As a priority, will there be a programme of ongoing, regular testing of any toxic products (like pesticides) being used in Bermuda?

c. How is a testing lab selected? By availability? capability? price? standards for accuracy?

d. What is the potential impact of including 'sprayed' vegetation in the material being composted at Marsh Folly for use by home gardeners?

e. How can the public access the information kept by the Ministry of Health in respect to the thresholds of safe exposure to toxic products (like pesticides)?

f. What is the response to the recent (Jan 2017) Ecologist article that suggests that RoundUp causes serious liver damage to rats even at the low doses permitted by regulators? http://www.theecologist.org/News/news_analysis/2988500/round-up-residues-in-food-cause-fatty-liver-disease.html

g. What is the degree of concern in the Ministry of Health to the action of 'systemic' chemicals (like RoundUp/Rodeo/neonicotinoids) which are taken up and into the plant and which would, therefore, travel up into the pollen, nectar and fruit of a plant?

h. As a preventative measure, Dr. Fosker's National Cancer Control Plan 2024-2030 which is a recent report on cancer in Bermuda, recommends "reducing exposure to harmful chemical and environmental elements, including agricultural pesticides".

i. How can we heed the warning in a recent article from Sustainable Pulse about the impact on marine environments from Glyphosate, which would be introduced into the water by way of run-off from the land, which happens frequently in Bermuda:

Glyphosate Reduces Ocean Carbon Sequestration and Damages Coral Reefs – New Study

Posted on Apr 2 2024 - 1:49am *by* [Sustainable Pulse](#)

<https://sustainablepulse.com/2024/04/02/glyphosate-reduces-ocean-carbon-sequestration-and-damages-coral-reefs-new-study/>

Something that we feel we didn't highlight nearly enough in our many, various submissions over the years is the very important question of the health of our soil in Bermuda, given the many years that we have used pesticides and chemical fertilizers. We believe that this information is also critical in considering the impact of pesticides on our food-growing environments.

There are a number of persons in Bermuda who have been studying the Soil Food Web with Dr. Elaine Ingham who is a microbiologist and soil biology

researcher in the United States and who is passionate about the way healthy, balanced soil can produce bountiful yields with neither pesticides nor chemical fertilizers. We hope that their knowledge can be put to good use in some way here in Bermuda and perhaps Dr. Ingham could be consulted as part of this initiative.

Please know that we are sympathetic to our authorities' efforts to make heads-or-tails of the many and often conflicting reports on the safety of toxic products (like pesticides), as well as coping with the often-unrelenting pressure of lobbyists and industry representatives (like Monsanto... now part of Bayer). We hope that the number of questions and concerns gathered and presented here serve to highlight the level of interest in the issue of toxic chemical use in Bermuda, given the threats to human and environmental health. We trust you will remain committed to serving these concerns through the establishment of an IPM program in Bermuda and to take pride in seeking solutions that reduce or eliminate exposure to these toxic products.

First and foremost, we must protect the health and well-being of our population and environment. We believe that the course you are charting here is unprecedented and extremely valuable... and for that we are grateful.

Becoming a "greener", more health-conscious destination would also yield dividends to our visitors and therefore could be a benefit to our **tourism** product.

We are looking for your assurance that our concerns are noted and understood and that our government is committed to protecting the health and well-being of our own population and environment. We want our government to be more prudent and to serve our residents better by reducing our exposure to environmental toxins and food contaminants to the greatest degree possible. It is indisputable that human health is rooted in a healthy environment. A quote well worth considering, that "the best way to predict the future is to create it." We would like the future for Bermuda to be bright and healthy, and we believe that you, **our government**, would as well.

In summary, BEST believes in the importance of the following areas of priority:

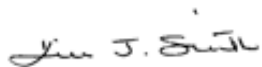
- The creation of a vision as it relates to the use of toxic chemicals in Bermuda.
- The formal adoption of an Integrated Pest Management program for Bermuda to reduce our dependence on pesticides, certainly as a first-line remedy and as a way to identify alternative options for the management of weeds and pests in Bermuda. Reducing our dependence on toxic products (like pesticides) will also help to address the inevitable resistance that pests and weeds build up to any product, leading to excessive levels of counteraction.
- That there be an audit of the chemicals currently being permitted for use in Bermuda.
- The removal of toxic chemicals from hardware stores, or wherever else they are sold, which provides easy access to persons with little to no understanding of the consequence of misuse or overuse of a toxic product.
- The establishment of a central Bulk Importation and Distribution Depot (BIDD) for chemical products, enabling government to have a complete sense of all that is coming into the island and to track purchasers/users of those products to ensure they have the appropriate training. This could then allow these toxic products to be removed from the shelves of hardware and grocery stores where the personnel are untrained to represent the toxicity of the products.
- That value be considered for a consultation with a leader in soil microbiology and research to provide some advice to assist us in determining the state of our soil health, given the many years of using chemical fertilizers and pesticides. It is anticipated that she can give us information on how to ensure that our farming soil has the right balance of organisms and how to get it back in balance when needed.

We do have concerns about the dominance of the Minister's powers in the legislation since that position is a political appointment and vulnerable to possible changes in leadership. Consistency in the application of policies that have such health implications might better be served by those responsibilities being assigned to the position of the Permanent Secretary. This is likely a moot point for this occasion

Similarly, the legislation is full of instances where a Minister's powers are seemingly more subjective, e.g. "The Minister may...". This is concerning given the degree to which any Minister could likely be challenged: balancing the desire to keep constituents 'happy' and supportive while fulfilling their Ministerial duties. Cynicism and concern go hand-in-hand in these modern times, and we feel that modern legislation needs to be armoured in appropriate and protective ways.

Finally, we want to register our concern about the impact of cross-Ministry responsibilities when it comes to pesticides management in Bermuda, between the Department of the Environment and Natural Resources (under the Ministry of Home Affairs) and the Departments of Health and Environmental Health (under the Ministry of Health). This arrangement, in our minds, represents a vulnerability in the system where the inevitable gaps become the cracks through which much can fall.

Thank you and BEST regards,

A handwritten signature in black ink, appearing to read "Kim J. Smith".

Kim Smith – BEST