Pesticide Selection Subcommittee Draft Recommendations

The Pesticide Selection Subcommittee is sharing this living document of draft recommendations to the Mosquito Control for the 21st Century Task Force. These topics will likely be the subject of recommendations from the subcommittee, for consideration by the full task force. Please note that the recommendation text presented here is still under development by the subcommittee and may not represent the ultimate majority opinion of the subcommittee.

Directive: *(vii) promoting the use of the safest or minimum risk pesticides feasible and employing methods, including product disclosures or implementation of testing protocols and procedures, to avoid the use of pesticides containing per- and polyfluoroalkyl substances*

1. **Selecting Pesticides and Ensuring a Transparent Selection Process (PS-4)**
2. **Consideration of Synergists (PS-5)**
3. **Avoiding Use of Pesticides Containing PFAS and Other Contaminants (PS-6)**

Directive: (ix) identifying known ingredients in pesticide products used for mosquito control, analyzing the ability, or lack of ability, to identify such ingredients, and making recommendations for determining such ingredients

4. **Active ingredients (PS-1)**
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1. Selecting Pesticides and Ensuring a Transparent Selection Process (PS-4)

Recommendation

All pesticides used by Commonwealth's organized mosquito control districts and the "SRB" are reviewed by EPA and are federally registered; and approved for use by the Commonwealth's Pesticide Board Subcommittee as outlined in M.G.L.c 132B and 333 CMR. In keeping with best practices and acknowledging concerns by some stakeholders that these reviews are not sufficient, the "SRB" or a subcommittee established by the "SRB" will further review pesticide products used in the management of mosquito populations. This Subcommittee should include DPH, DFW-NHESP Division, DEP, MDAR, DMF (Division of Marine Fisheries), and a representative from a MCD and review the products from their Agencies directive. Review will include but not limited to: regulations protecting both surface and groundwaters of the Commonwealth, aquatic organisms, endangered species concerns, toxicity, risk assessment and benefit to public health. This formalized review of products may be conducted annually or when deemed necessary. When a pesticide is reviewed, formulations and manner of application are considered and will be deemed efficacious, practical, and pose more benefit to human health than risk to human health and the environment for recommendation.
Once pesticide products are reviewed, they are included in the statewide Mosquito Management plan which specifies factors that are considered in the process of selecting pesticides used to control mosquitoes. An opportunity for public comment should be provided before this plan is finalized. The statewide Mosquito Management plan will be easily available and discoverable to any interested party on multiple websites such as but not limited to; MDAR, SRB, DPH, Commonwealth organized mosquito control districts and any local Board of Health or organization that request the information. These websites will also contain a summary of the pesticide registration and approval processes of the EPA and Massachusetts Pesticide Board Subcommittee.

Background and Rationale

Introduction

The Subcommittee has been charged with providing guidance on "promoting the use of the safest or minimum risk pesticides feasible."
From a technical/scientific perspective, the Subcommittee does not feel this language of the charge is appropriate for several reasons:

1. Risk communicators and regulators have long eschewed the use of the word "safe" as it is an imprecise/subjective term often interpreted by the public to mean that no precautions are necessary.

2. "Minimum Risk" is a preferable term, but still simplifies the dynamic of choosing the most appropriate pesticide. For instance, it does not acknowledge that pesticides may pose a relatively low risk in one area (for instance human health) and a greater risk in another (for instance pollinators).

3. The charge ignores the fact that efficacy must be a consideration in choosing a pesticide. Pesticides are registered based on risk and benefit. If a pesticide is not efficacious, then the risk is unacceptable. As worded, garlic-based products would score highly on a list of

preferable products, despite a consensus among mosquito management professionals that they have very limited benefits.

4. Use patterns and application methods (ultra-low volume, barrier applications, etc.), site of application (water, playgrounds, etc.), and even the level of licensure of the applicator have significant implications on the risks posed by the use of a pesticide. The charge ignores this fact.

The Subcommittee has redefined its charge to meet what we collectively believe to be the intent and spirit of the original language. We have been operating under the following:
When a pesticide is considered justified from those products already registered by EPA and the Pesticide Board Subcommittee, applicators shall select formulations and manner of their application that will be deemed efficacious, practical, and pose more benefit than risk to human health and the environment.

Background

There seems to be a disconnect with stakeholders (including the public, elected officials, and environmental groups) regarding the pesticide selection process, which may lead to the perception that there is no scientific basis for pesticide selection. The risk of a pesticide depends on exposure and toxicity. Human and environmental health must be considered when selecting a pesticide for use. The biology and lifecycle of mosquitoes, as well as their habitat, spatial and temporal abundance, and their capacity to transmit pathogens must also be considered.

The existing active ingredients for mosquito control are quite limited. In relation to agriculture, mosquito control is a small market and new active ingredients are not often formulated or sold. This leaves mosquito control districts with limited options and therefore limited choices. Consistency across MCDs is important while balancing flexibility for MCDs to use the products in the manner they see fit.

While there is a formalized process for registering pesticides by EPA and the Commonwealth of Massachusetts, many are not aware of these processes because the information is not centralized in one location, like a website. Stakeholders would need to search multiple sites to find the information necessary to understand the process. The current process after federal registration includes the Pesticide Board Subcommittee outlined in M.G.L.c 132B and CMR 333. The five member Subcommittee is Chaired by the Director of the Food Protection Program within the Department of Public Health with the other four members consisting of representatives of the Department of Agricultural Resources, Department of Conservation and Recreation, Department of Public Health, and a Commercial Pesticide Applicator appointed by the Governor. The Subcommittee is responsible for registering all pesticides for use in the Commonwealth. The Massachusetts Pesticide Board Subcommittee is also responsible for reviewing new active ingredients and issuing all experimental use permits.

Formalizing a selection process will promote and ensure consistency on how pesticide selection is carried out across all entities responsible for mosquito pesticide applications, including SRB and MCDs in the Commonwealth. Currently the SRB relies on several state agencies to review and provide their opinion on products used for aerial adulticiding applications in the event of a declared public health emergency. These agencies include DPH, DFW-NHESP Division, DEP, MDAR and DMF (Division of Marine Fisheries). DFW-NHESP Division currently reviews and provides guidance on all pesticides used by MCDs in the Commonwealth within sensitive areas.

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2. Consideration of Synergists (PS-5)

Recommendation

To address the potential ecological concerns of synergists in pesticide formulations, the Pesticide Selection Subcommittee recommends:

- Directing an appropriate state agency (which may be MassDEP, DFG, or another agency) to conduct periodic assessments of insecticide levels throughout the Commonwealth. An initial baseline assessment of sediments shall be conducted by both assembling existing data from USGS and other published sources and, if needed, by collecting additional data. The designated agency will be responsible for specifying which waterbodies will be considered for the periodic baseline assessment; but at a minimum, the assessment must consider areas where aerial application of mosquito pesticides has previously occurred and expected to occur in the future. The designated state agency will conduct the statewide sediment characterization every 5 years unless that agency justifies use of a different assessment frequency; and the designated state agency will be responsible for determining if future assessments should consider insecticides in other environmental media (e.g., surface soil) although sediments are broadly recognized as the major sink for pyrethroid insecticides.[11] These assessments should acknowledge that insecticides found in sediments and other environmental media may originate from many sources, not just from mosquito control.

- Following the completion of the insecticide assessment, the SRB shall review the assembled data and evaluate whether synergism of insecticides already present in aquatic sediments or other environmental media is possible following application of additional mosquito control insecticides containing synergists. If any waterbodies or lands are judged to have potential ecological effects of concern due to synergism, the SRB shall take this information into consideration when choosing which mosquito control products to use around impacted areas.

- The periodic assessments and the SRB synergism evaluations are to be public documents.

The Subcommittee acknowledges that, in order for this recommendation to be implemented, the Legislature must allocate sufficient resources to fund the designated state agency's periodic assessments (which may include sampling costs) and the SRB's periodic synergism evaluations.

Background and Rationale

Pyrethroid insecticides, while exhibiting relatively low mammalian toxicity, are responsible for increased invertebrate toxicity[1] and decreased aquatic macrobenthic species biodiversity.[2] The state of Massachusetts has approved several pyrethroid-based insecticide products for use in truck-based and aerial spraying for mosquito control. Many pyrethroid-based insecticide formulations include a synergist, piperonyl butoxide (PBO). Although PBO is not an insecticide, it causes insecticides to be more toxic to mosquitos and other invertebrates by inhibiting the metabolism of the insecticides. Use of pesticide formulations containing PBO (or other synergists) is often preferred because lower quantities of active ingredients are needed to cause the same level of mosquito mortality.

There is limited scientific information on the toxic effects of insecticides to aquatic life after mosquito spraying and more data would be helpful in assessing the ecological risks. However, the few studies that have been done, published studies from California[3-4] and monitoring reports conducted in

Massachusetts[5], suggest that the pyrethroids used for mosquito spraying are not detected in water bodies two days after spraying and there is limited detection of these pyrethroids in sediment samples (approximately 5%) collected three days after spraying. This is likely due to the choice of insecticides used. For example, phenothrin, the insecticide used in Massachusetts since 2010 has a low vapor pressure and readily volatilizes from water.[5]

However, a concerning finding from previous studies was that insecticide formulations that include the PBO synergist can cause increased toxicity of pyrethroid insecticides already present in the receiving waters and their sediments.[3] This was the major finding of a 2006 study that sampled water and sediments in Sacramento, California, following aerial application of pyrethrins + PBO. PBO persisted for at least three days post spraying (sampling did not occur beyond three days) and the levels of PBO present synergized other pyrethroids, including bifenthrin, that were already present in the sediments. The study's authors concluded that regulatory agencies should consider the ability of PBO to make pyrethroids already present in urban/suburban areas more toxic.[4] Pyrethroid insecticides have become ubiquitous in suburban and urban sediments due to their widespread occurrence in lawn and garden products and to their use by private applicators.[7-9] Many Massachusetts areas have pyrethroids in sediments[10] and PBO could make these sediments more toxic.

References:

[1]Schulz, R., Bub, S., Petschick, L.L., Stehle, S. and Wolfram, J., 2021. Applied pesticide toxicity shifts toward plants and invertebrates, even in GM crops. *Science*, *372*(6537), pp.81-84.

[2]Stehle, S. and R. Schulz. 2015. Agricultural insecticides threaten surface waters at the global scale. *Proc Natl Acad Sci U S A* 112 (18):5750-5.

[3] Phillips, B.M., Anderson, B.S., Voorhees, J.P., Siegler, K., Denton, D., TenBrook, P., Larsen, K., Isorena, P. and Tjeerdema, R.S., 2014. Monitoring the aquatic toxicity of mosquito vector control spray pesticides to freshwater receiving waters. *Integrated environmental assessment and management*, *10*(3), pp.449-455.

[4]Weston, D.P., Amweg, E.L., Mekebri, A., Ogle, R.S. and Lydy, M.J., 2006. Aquatic effects of aerial spraying for mosquito control over an urban area. *Environmental science & technology*, *40*(18), pp.5817-5822.

[5] MassDEP, 2020, Response to Eastern Equine Encephalitis Virus Mosquito Control Aerial Spray Events 2019: A Summary of the Surface Water Quality Sampling Operations. Available at, https://www.mass.gov/doc/response-to-eastern-equine-encephalitis-virus-mosquito-control-aerial-spray-events-2019/download

[7] Weston, D. P., R. W. Holmes, and M. J. Lydy. 2009. Residential runoff as a source of pyrethroid pesticides to urban creeks. *Environ. Pollut.* 157 (1):287-94.

[8] Weston, D. P., R. W. Holmes, J. You, and M. J. Lydy. 2005. Aquatic toxicity due to residential use of pyrethroid insecticides. *Environ. Sci. Technol.* 39 (24):9778-9784.

[9] Kuivila, K. M., M. L. Hladik, C. G. Ingersoll, N. E. Kemble, P. W. Moran, D. L. Calhoun, L. H. Nowell, and R. J. Gilliom. 2012. Occurrence and potential sources of pyrethroid insecticides in stream sediments from seven U.S. metropolitan areas. *Environ. Sci. Technol.* 46 (8):4297-303.

[10] Hartz, K.E.H., Nutile, S.A., Fung, C.Y., Sinche, F.L., Moran, P.W., Van Metre, P.C., Nowell, L.H. and Lydy, M.J., 2019. Survey of bioaccessible pyrethroid insecticides and sediment toxicity in urban streams of the northeast United States. *Environmental Pollution*, *254*, p.112931.

[11] Méjanelle L., Jara B., Dachs J. (2020) Fate of Pyrethroids in Freshwater and Marine Environments. In: Eljarrat E. (eds) Pyrethroid Insecticides. The Handbook of Environmental Chemistry, vol 92. Springer, Cham. https://doi.org/10.1007/698_2019_433.

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3. Avoiding Use of Pesticides Containing PFAS and Other Contaminants (PS-6)

Recommendation

To avoid use of pesticides containing PFAS and other contaminants, the Pesticide Selection Subcommittee recommends:

- As analytical capabilities evolve, the Pesticide Board Subcommittee should have methods available to ensure pesticide products registered in Massachusetts are not contaminated with PFAS or emerging contaminants of concern. The Subcommittee understands there are complexities and costs associated with testing products for use in the Commonwealth. Some considerations to be discussed are the extent and frequency of testing (e.g., is it every lot, is it each method of delivery, is it annually or just newly registered pesticides, who is responsible for undertaking the testing, who is responsible for paying for the testing). We also recognize that the charge of this Task Force is specific to mosquito control, but some members of the Subcommittee have concern that all pesticide products registered in Massachusetts should be under evaluation. The Commonwealth could institute producer certification requirements, or require the manufacturers to submit sampling results, or the Commonwealth could undertake the sampling and analysis on its own, but additional financial and personnel resources would need to be provided to any Massachusetts agency tasked with that effort.
- The Subcommittee is concerned about the old adage: "You don't know what you don't know." We have a desire for the Commonwealth to be proactive, rather than reactive in identifying pesticides that might have unintended properties. While we are currently focused on PFAS, there may be other characteristics, such as pesticides that might have endocrine disrupting properties, which the Pesticide Board Subcommittee may want to look at. Pesticides registered for use in Massachusetts could be required to have bioassay screening which can pick up on emerging contaminants or undesirable compounds, without requiring manufacturers to disclose inert ingredients which could compromise Confidential Business Information. EPA's TOX CAST database could be a point of reference for this evaluation. Additional financial and personnel resources would need to be provided to the Pesticide Board Subcommittee to accomplish such an evaluation.
- The Pesticide Board Subcommittee should prevent the use, through a "stop sale" or "stop use" order, of any pesticides where PFAS or emerging contaminants of concern have been detected in the product. This issue should be raised with the legislature's Interagency PFAS Task Force which may have recommendations related to PFAS source control in the Commonwealth. An outright ban on the sale or use of pesticides that contain PFAS might need to be implemented through legislative action. There is pending legislation to ban the use of PFAS in consumer products and food packaging; pesticides could be added to that pending legislation.
- The Pesticide Board Subcommittee should define "persistence." Understanding that persistence may be a desirable trait in some pesticide products; the Pesticide Board Subcommittee should have a process to evaluate where persistence might be a concern and they should take appropriate action to restrict use of such products in Massachusetts.
- If EPA determines that any pesticides have active ingredients that fall into a current or revised PFAS definition, Massachusetts must add those to the Groundwater Protection List.

Background and Rationale

Concern about the impact that PFAS compounds have on human health and the environment has increased in the last decade. Massachusetts has been proactive in regulating PFAS in drinking water and groundwater by setting a Massachusetts Maximum Contaminant Level of 20 parts per trillion (ppt) for the sum of six PFAS compounds (PFAS6), as well as classifying PFAS as a hazardous material under MGL 21E and the Massachusetts Contingency Plan. PFAS are ubiquitous, they are persistent, and sampling conducted throughout the Commonwealth shows their presence in rivers, groundwater, soils, drinking water sources (both public and private), wastewater discharges, and biosolids.[1]

In September 2020, Public Employees for Environmental Responsibility (PEER) notified the Commonwealth and the United States Environmental Protection Agency's (EPA) Region 1 office that sampling they conducted indicated the presence of PFAS in Anvil 10+10. Follow up sampling conducted by MassDEP and EPA confirmed the presence of PFAS in the pesticide. "In response to public interest in PFAS chemicals, the EPA Office of Pesticide Programs previously determined that there were no pesticide active or inert ingredients with structures similar to prominent PFAS such as PFOS, PFOA, and GenX."[2] After further investigation it was determined that the PFAS was not part of the product formulation, but rather PFAS was leaching from the containers that the pesticide was distributed in.[3] EPA confirmed that it "detected eight different PFAS from the fluorinated HDPE containers, with levels ranging from 20-50 parts per billion,"[4] which is quite a bit higher than the Massachusetts Maximum Contaminant Level of 20 ppt. Given that we are still trying to understand PFAS fate and transport in the environment, seeing levels as high as they were causes concern about the potential impact previous applications of those pesticides could have had on groundwater and surface waters of the Commonwealth. EPA and the manufacturer responded swiftly to the detection of PFAS in Anvil 10+10; EPA encouraged states not to use the impacted product and to return it to the manufacturer. Recognizing the importance of addressing concerns related to PFAS across many regulatory programs, EPA released a strategic roadmap for actions they will be taking relative to PFAS; Massachusetts should monitor the process closely and respond accordingly as new information emerges.

Scientific research on pretty much all aspects of PFAS is rapidly evolving, as is the ability to detect these compounds in various media. EPA released a draft method for sample analysis of PFAS in oily matrix. In addition, EPA is currently evaluating chemical structures and applying the working definition from EPA's Office of Pollution Prevention and Toxics (OPPT). EPA states: "Under FIFRA Section 6(a)(2), pesticide registrants should report to EPA additional factual information on unreasonable adverse effects, including metabolites, degradates, and impurities (such as PFAS). EPA considers any level of PFAS to be potentially toxicologically significant and may trigger 159.179(b) in the Code of Federal Regulations (CFR)."[5] MDAR reports that the Pesticide Board Subcommittee is already looking at PFAS and may make recommendations related to adopting EPA's working definition.

Finding PFAS in pesticides when it was not supposed to be there raises the question of how the Commonwealth can ensure that other "contaminants" are not inadvertently introduced to the environment through the application of pesticides. The Subcommittee recognizes that while PFAS is the current focus, the Commonwealth should be on the lookout for other emerging contaminants, especially those that are persistent and bioaccumulative, and proactively have a plan to address any concerns. Source control is an important measure to ensure that inadvertent contamination of our drinking water sources and the environment does not occur.

[1] https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas

[2] https://www.epa.gov/pesticides/updates-epa-efforts-address-pfas-pesticide-packaging#:~:text=To%20date%2C%20the%20only%20PFAS,(Anvil%2010%2D10).

[3] https://www.epa.gov/pesticides/pfas-packaging

[4] https://www.epa.gov/pesticides/pfas-packaging#info

[5] https://www.epa.gov/pesticides/pfas-packaging#info

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4. Active ingredients (PS-1)

Recommendation

The Subcommittee makes no recommendation relative to additional active ingredient disclosure beyond what is currently required. Subcommittee members unanimously agreed that the identity of active ingredients, including synergists, is adequately addressed through the current federal and state regulatory programs and processes.

Background and Rationale

Pesticide formulations generally consist of two types of ingredients: active ingredients and "inert" ingredients. Active ingredients are those chemicals in a formulation that have pesticidal action against a target pest. Pesticidal action may include killing the pest, repelling it, deterring feeding, or otherwise mitigating the pest. Synergists, a subcategory of active ingredients, enhance the pesticidal action of another active ingredient in the formulation. The synergist piperonyl butoxide (PBO) is a common ingredient in mosquito adulticide formulations containing pyrethroid or pyrethrum/pyrethrin ingredients.

Active ingredients, including synergists, are required by federal law to be listed on pesticide labels. The Subcommittee found no evidence of active ingredients not being identified on labels of registered pesticides.

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5. Inert ingredients – Option #1 (PS-2)

Recommendation

The Subcommittee critically evaluated the current EPA process for reviewing inert ingredients; and the majority of the Subcommittee felt that EPA's review is adequate and recommended that no further action is necessary.

These Subcommittee members acknowledged that Massachusetts is a relatively small market for mosquito pesticides. If faced with public disclosure of CBI, many companies would simply choose not to register products in the state. CBI is typically a larger issue with newer products, many of which offer health, efficacy, and environmental safety advantages over older products. As such, it will often be in the best interest of the Commonwealth to be able to protect CBI.

There were two dissenting members:

- One felt that additional checks and balances on EPA review were necessary. This is because the state of Massachusetts often regulates chemicals more stringently (and in a more precautious manner) than the federal government does. Refer to recommendation PS-3 for further information. (Note: The Subcommittee members unanimously agreed that concerns about CBI claims relative to inert ingredients is often justified. If the Task Force is to move forward with recommendation PS-3, which calls for a state agency to review inert ingredients, then this should be accompanied by a recommendation that legislation be enacted to protect inert ingredients from disclosure under Massachusetts Public Records law.)

- Another felt that this had been a long-standing issue and concern, particularly from the environmental community. It remains to be seen if a review of mosquito control pesticides will be done at the state level (outside of the Pesticide Board Subcommittee). If it is, it would seem prudent to provide whoever is doing this review with the ability to review inert ingredients as well, so long as CBI can be protected under the Open Records Law.

Background

Pesticide formulations generally consist of two types of ingredients: active ingredients and "inert" ingredients. Inert ingredients are those chemicals in a pesticide formulation without intended pesticidal action. They are sometimes referred to as "other" ingredients on pesticide labels. These inert ingredients may include adjuvants, drift retardants, solvents, fragrances, etc. Inert ingredients are not necessarily toxicologically inert, and may pose risks to human or ecological health. EPA categorizes inert ingredients based on their use and toxicological profile (https://www.epa.gov/pesticide-registration/categorized-lists-inert-ingredients-old-lists).

Inert ingredients are considered to be Confidential Business Information (CBI) and are often not listed on the label. In some situations, the disclosure of inert ingredients can be used by competitors to a given company to recreate a formulation. This creates an issue with regulatory/government review of pesticides as some agencies do not have the ability to protect submitted information from public records/freedom of information laws. While EPA has the ability to review inert ingredients as part of registration without disclosing CBI, this is not typically the case in Massachusetts. The Pesticide Board Subcommittee does not have the ability to protect CBI from public disclosure, but other Massachusetts agencies reportedly do have this ability.

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6. Inert Ingredients – option #2 (PS-3)

Recommendation

This recommendation is to update/amend the appropriate state legislation and provide appropriations and resources so the following changes can be made:

- The makeup of the Pesticide Board Subcommittee will be amended to include the Massachusetts Department of Environmental Protection (MassDEP) as MassDEP is the agency responsible for setting regulatory standards for surface and drinking waters and is responsible for regulating toxic substances. MassDEP is often consulted on matters related to the Pesticide Board Subcommittee and this would formalize their involvement. If the creation of a board with an even number of members is seen as problematic, an additional public member of the Pesticide board may be added to the Subcommittee.
- Require that pesticide registrants, starting with the mosquito control products, to include information about inert ingredients and their percentages in their product registration applications. This information will be reviewed in a confidential manner by the MDAR and as needed, by MassDEP. These agencies will present only general information about the overall hazard assessments of the inert ingredients during an open meeting of the Pesticide Board Subcommittee so that they do not disclose confidential business information.
- All information that is protected as confidential business information under FIFRA, section 10, will also be protected during the Massachusetts product registration process.

Background and Rationale

There are currently 4,555 chemicals or substances approved as inert ingredients by the EPA for "Food and Nonfood Use" or "Nonfood Use Only" (EPA InertFinder; https://ordspub.epa.gov/ords/pesticides/f?p=INERTFINDER:1:0::NO:1::). These lists contain substances reviewed by the EPA Integrated Risk Information System (IRIS) and found to be carcinogenic, compounds that are regulated by the Safe Drinking Water Act (SDWA) and the Clean Water Act (CWA), and compounds subject to the Massachusetts Toxic Use Reduction Act. It also contains fluorinated compounds such as para-chlorobenzotrifluoride (a compound designated by the state of California, but not the EPA, to cause cancer).

EPA sets minimum standards the states must adopt, although states have the ability to set stricter standards. Massachusetts regulates several chemicals under the CWA and the SDWA at more stringent levels than EPA guidelines. These include two chemicals with lower (more stringent) drinking water maximum contaminant Levels (MCLs) compared with EPA guidelines (Perchlorate and PFAS6) and at least 24 chemicals that have lower (more stringent) water quality standards for surface water contamination compared to EPA guidelines. These examples provide evidence that the Commonwealth of Massachusetts takes additional considerations into account when setting chemical regulations compared with the EPA.[6] With this in mind, the state of MA should not defer to EPA's approval when it comes to the over 4,500 inert ingredients currently registered for use in the US.

Currently the Massachusetts Pesticide Board, Pesticide Subcommittee, established by the Massachusetts Pesticide Control Act of 1978, reviews pesticide products for registration in Massachusetts. This Subcommittee consists of the following members: MDAR (Massachusetts Department of Agricultural Resources), MDCR (Massachusetts Department of Conservation and Recreation), MDPH (Massachusetts Department of Public Health, the Director of Division of Food and

[6] A couple Subcommittee members have expressed concern that Massachusetts does not have as robust a regulatory process for evaluating and setting standards for contaminants as EPA's process and EPA's process should be followed. One member stated that different states setting different standards creates challenges for the regulated community.

Drug (within MDPH) and a commercial applicator appointed by the Governor. This board is a public body and subject to Open Meeting Law (although the Pesticide Board can hold an executive session which appears to be a closed meeting). Therefore, there is concern that if pesticide registrants include inert ingredient lists and percentages in their application, it would be made public. However, applications are sent to MDAR which initially reviews the application for administrative and technical aspects. It does not appear that MDAR's technical review is subject to Open Meeting Law, only the information that is presented to subcommittee. It could be possible for MDAR or another body to review the inert ingredients for toxicological considerations and keep CBI confidential. They would only be able to present general information to the subcommittee such as a general decision on whether the inert ingredients were safe or not safe for application according to the label.