



# SIERRA CLUB

## MAINE CHAPTER

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To: Committee on Agriculture, Conservation, and Forestry  
From: Patricia Rubert-Nason, Sierra Club Maine  
Date: April 13, 2021  
Re: Testimony in Support of LD 1158

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Senator Dill, Representative O'Neil, and Members of the Joint Committee on Agriculture, Conservation, and Forestry. My name is Patricia Rubert-Nason and I write on behalf of Sierra Club and the over 20,000 members and supporters in Maine. Founded in 1892, Sierra Club is one of our nation's oldest and largest environmental organizations. We work diligently to amplify the power of our 3.8 million members nation-wide as we defend everyone's right to a healthy world. We believe the regulation of persistent pesticides is an important issue, but that LD 1158 is not clear. We recommend that the bill be amended to define a persistent pesticide and we would like to offer a potential definition. We also suggest that LD 1158 be amended to focus only on the regulation of persistent pesticides.

Persistent pesticides are a special concern because they tend to accumulate in the environment with repeated applications. This is compounded if they are applied at rates and frequencies higher than recommended. However, one shortcoming of the current bill is that "persistent" is not defined. We'd like to offer you a definition currently in use elsewhere: "Persistent pesticide means any pesticide, or its metabolites of equal or greater toxicity, which will be present in the environment beyond one year from the date of application."<sup>1</sup> Based on this definition, any persistent pesticide applied at least once a year will tend to accumulate in the environment and cause increasing problems over time. As such, we believe that their use should be strictly regulated.

Breakdown of pesticides in the environment can be complicated, but a good first order approximation can be achieved by looking at the half life.<sup>2</sup> Information on the half lives of pesticides is available from the National Pesticide Information Center.<sup>3</sup> In toxicology, a substance is generally considered to have been eliminated after 5 half lives, when about 3% remains in the environment. This would indicate that persistence for one year would correspond to a half life of 70 days. However, breakdown rates are dependent on

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<sup>1</sup> <https://www.lawinsider.com/dictionary/persistent-pesticide>

<sup>2</sup> National Pesticide Information Center  
<http://npic.orst.edu/factsheets/half-life.html>

<sup>3</sup> <http://npic.orst.edu/ingred/ppdmmove.htm>

conditions and generally are reduced by low soil temperatures. Given the length and severity of Maine winters, a half-life of 30 days may be a more appropriate guidepost for persistence in our climate.

With that in mind, we would like to offer the following definition for “persistent” to the committee:

"Persistent" means pesticides with half-lives greater than 30 days in the environment for the active ingredient, other toxic ingredients, or their breakdown products of comparable or greater toxicity.

A couple of caveats on the use of half life to identify persistent pesticides. First, a definition based purely on half life does not address the issue of toxic breakdown products. This can be very significant as the metabolites of some pesticides are as, or even more, toxic than the original compound. The stability of metabolites can also differ from the original compound as well, in either direction. Consequently, there may be cases where a breakdown product is the main concern as it has high toxicity and is very persistent in the environment even where the original compound does not persist. Second, note that the cited half lives are specific to pesticides in soil and do not address what happens when the same compound enters the aquatic environment or the food chain. Finally, it is important to consider not only the active ingredient(s) in a formulation as other ingredients in pesticide formulations can also have significant toxicity and persistence in their own right. Interactions between the ingredients can also affect both the stability and toxicity of pesticides.

Despite these limitations, half life has the advantage of being a clear metric which should generally be available for most pesticides.

With regards to the second part of the bill, changing the makeup of the Board is critical, but we think LD 1159 is a better way to accomplish that at this time.

In essence, we agree that toxic persistent chemicals need to be removed from our environment regardless of the application. To achieve that end, we think LD 1158 could be amended to start that process.

Respectfully,

Patricia Rubert-Nason  
Legislative Team Volunteer