

THE NEED FOR SURFACE WATER PESTICIDE MONITORING IN VERMONT

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The problems related to the finding of neonicotinoid insecticides (neonics) in our agricultural streams at levels potentially toxic to aquatic organisms are symptoms of a much larger issue in Vermont: we have very little knowledge of what pesticides and other organic contaminants are being used in Vermont, the level at which they are present in our surface waters, or their effects on aquatic plants and animals.

The Vermont Agency of Agriculture (VAAFM) currently collects information from commercial pesticide applicators on annual use of pesticides, by county of use. Unfortunately, this provides no information on homeowner uses of pesticides, neither quantity nor locations of use. Without this information it is not possible to determine what quantities of pesticides are being used overall in Vermont. For instance, homeowner use of the neonic Imidacloprid for lawncare is probably a major use of this insecticide in Vermont, but we don't know. In addition, we have no information on where non-commercial pesticide use may be occurring. In agricultural settings, most pesticide use is by commercial applicators so we at least know generally what is being used and where. For other uses, we don't have that information. For homeowner use, information on point of sale isn't adequate because large retailers can draw customers from large portions of the state. Requiring large retailers to ask customers who purchase pesticides to supply their home zip code would provide the information necessary to understand overall pesticide use in Vermont.

Detailed information on pesticide sales in Vermont would tell us what might be getting into our surface and ground waters, but not what is actually getting there and where. A commitment by Vermont to a thorough, well thought out surface water monitoring program at VAAFM for pesticides of emerging concern should detect contaminants before they lead to issues of "impaired waters".

The VAAFM has no ongoing long-term surface water monitoring program for pesticides. Surface water monitoring for corn herbicides such as Atrazine is being de-emphasized, and the discovery of neonics in our waters was only discovered ancillary to work developing the methodology for neonic testing in bee pollen requested by the legislature. There are no current efforts to investigate pesticides in our surface waters from urban pesticide use.

With the merger of the Vermont Agriculture and Environmental Labs into The Vermont Agriculture and Environmental Laboratory (VAEL), it is possible to develop a coordinated strategic plan for monitoring organic contaminants of emerging concern such as pesticides, in our surface waters. Analysis of non-pesticide organic pollutants such as pharmaceuticals and personal care products (PPCPs) in surface waters is very similar to pesticide analysis, utilizing the same technology and expertise. Therefore, with the creation of VAEL, a comprehensive program for surface water monitoring of organic contaminants of emerging concern is both possible and feasible. Polycyclic Aromatic Hydrocarbons from transportation, pesticides from lawncare and PPCPs from domestic uses are all issues of concern internationally in urban surface waters, which Vermont has no information on.

A comprehensive surface water monitoring program run by VAEL could fill this gap in our knowledge of Vermont water quality before issues such as PFOA in groundwater and neonics in surface waters spiral out of control. Listed below are several suggestions which would give us a thorough knowledge of pesticide use in Vermont and organic contamination of our surface waters.

- 1) Direct the VAAFM to utilize pesticide registration fees to develop and implement a system for collecting sales information on all class A,B, and C pesticides sold in Vermont. Quantity of sales by product, and location of use, by zip code, shall be reported annually to VAAFM.

- 2) Direct the VAAFM to utilize pesticide registration fees to develop and maintain a surface water monitoring program thru the VAEL for neonics and other organic contaminants of emerging concern, such as pharmaceuticals and PAHs. Report to the legislature annually.

*recently retired from the Vermont Agency of Agriculture with 30+ years as a pesticide chemist. For more information please refer to the accompanying report to the Lake Champlain Basin Program: ***Organic Contaminants of Emerging Concern in the Lake Champlain Basin: A review of Current Knowledge, 2016.***