

Title: Consideration of Pesticide Residues in Water Quality Assessment**Statement of the Problem(s)** (or Reason for Action(s) to be taken):

Each year billions of pounds of pesticides are applied to U.S. croplands, residential lawns, roadsides, and forests. Over time, these chemicals are degraded by soil bacteria, sunlight, and hydrolysis. In some regions, the degradation products are among the most common contaminants found in drinking water. The U.S. Geological Survey recently reported that eight of the 10 most frequently detected compounds in Iowa groundwater were degradates of three popular corn herbicides - acetochlor, metolachlor, and alachlor. Similar findings have been reported by other researchers. For example, in 2000, the Wisconsin Dept of Agriculture, Trade and Consumer Protection (WDATCP) found traces of these herbicide degradation products in slightly more than half of municipal wells located in agricultural areas. In an ongoing statewide study of private drinking water wells, WDATCP is finding detections of alachlor, metolachlor, and acetochlor degradates in over 25 percent of wells tested.

Federal and state drinking water standards have not been established for these substances and there is currently no requirement that public water supplies be tested for their presence. Although they are structurally similar to their parent pesticide, they are typically less potent herbicides. Their effects on human health are less well understood and few have been tested using standard toxicology screening methods. As a result, the impact of these common drinking water contaminants on public health is not known.

Desired Action(s) to be Taken:

- 1) CSTE members should encourage the U.S. Environmental Protection Agency (EPA) to include pesticide degradation products in their assessment of drinking water safety. Federal drinking water standards and health advisories should be developed for degradates that are regularly detected in our nation's drinking water. This action may require more extensive testing of these substances in experimental animals to determine their potential to cause cancer and other health problems.
- 2) CSTE members should encourage the U.S. EPA to include pesticide degradation products found in drinking water and food in their assessment of human exposure – especially children's exposure – to pesticides.
- 3) CSTE members should encourage the EPA to consider the ability of degradation products to contaminate potable water in their decision to register (or re-register) pesticides.
- 4) CSTE members should encourage CDC and other federal agencies to fund research on the health effects of pesticide degradation products.

5) Epidemiological studies conducted by CSTE members should consider potential exposure to pesticide degradation products.

CSTE members should encourage EPA to require laboratory methods for degradates known to contaminate water resources before registration is complete.

Fiscal Impact:

This resolution is expected to increase the cost of water analysis since laboratories would need to include pesticide degradation products in their analysis of parent compound. Treatment to remove or reduce the concentration of degradation products to acceptable levels could increase water treatment costs. These costs would be dependent on the level of contamination and hazard assessment.

Probable Impact on Public Health:

This resolution is expected to improve public health by reducing human exposure to pesticide residues. Many pesticides have been shown to be experimental carcinogens, teratogens, or endocrine disruptors. Their degradation products, which are structurally similar, may also cause adverse health effects.

Lead Author:

Henry Anderson, MD
Chief Medical Officer
Wisconsin Department of Health and Family Services
1 West Wilson
Room 150
Madison, Wisconsin 53701
United States
Telephone: (608) 266-1253
Fax:
Email: anderha@dhfs.state.wi.us

Co-Author(s):

Lynda Knobeloch, PhD
Senior Toxicologist
Wisconsin Department of Health and Family Services
1 West Wilson
Room 150
Madison, Wisconsin 53701
United States
Telephone: (608) 266-0923
Fax:
Email: knobelm@dhfs.state.wi.us

Agencies for Response:

Agencies for Information: