

Title: Groundwater Monitoring Project for Pesticides (Study No. 2)

Investigators: Principal Investigator
Jeffrey K. Postle, Groundwater Specialist
Wisconsin Department of Agriculture, Trade & Consumer Protection

Project Assistant
Kevin Brey
Wisconsin Department of Agriculture, Trade & Consumer Protection

Period of Contract: August 13, 1985 through June 30, 1990

Objectives: To determine the extent of groundwater contamination from pesticide use in susceptible areas of the state. The pesticides of interest were atrazine, alachlor, aldicarb, metolachlor and metribuzin.

Background/Need: Under ch. 160, Stats., the Department of Agriculture, Trade and Consumer Protection (DATCP) must adopt preventive rules to limit pesticides in groundwater. In order to fulfill this directive, DATCP must know the nature and extent of the problem to be addressed. This study was initiated by DATCP to investigate the occurrence of pesticides in groundwater related to pesticide use.

Methods: Monitoring sites were selected in areas with relatively sandy soils, less than 25 feet to groundwater, appropriate pesticide use history and irrigation. Water table observation wells were installed and groundwater flow determined. Monitoring wells were installed and sampled quarterly.

Results: 12 sites were monitored for aldicarb. 11 of the sites exceeded the preventive action limit (PAL) of 2 parts per billion (ppb) and 5 sites exceeded the enforcement standard (ES) of 10 ppb. Alachlor exceeded the ES of 0.5 ppb at 4 of the 23 sites. Atrazine exceeded the ES of 3.5 ppb at 8 of the 35 sites. Metolachlor was detected at 8 of the 20 sites monitored between the PAL of 1.5 ppb and ES of 15 ppb. Metribuzin was found below the unofficial health advisory level of 25 ppb at 15 of the 18 sites. Nitrate-nitrogen exceeded the ES of 10 ppm parts per million in 90% of the fields studied.

Conclusions/Recommendations: Atrazine was the most commonly detected pesticide in this study and will need further regulation to prevent further contamination. Significant changes in nitrogen management practices are necessary to comply with the standards. Groundwater is more contaminated by nitrate-nitrogen and several herbicides in the Lower Wisconsin River Valley due to soil conditions leading to a higher susceptibility to leaching.

Availability of Report: Copies of this report can be obtained from:

The Department of Agriculture, Trade & Consumer Protection
801 W. Badger Rd.
Madison, WI 53713
(608) 266-9959

This report is available for viewing and loan at:

The Water Resources Center
1975 Willow Drive
Madison, WI 53703
(608) 262-3069
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Alachlor, aldicarb, atrazine, Lower Wisconsin River Valley, metolachlor, metribuzin, nitrate-nitrogen, pesticide.

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