

Aldicarb Update - Research

A. T. Lemley 6/4/80

Problem

The Aldicarb found in wells in Suffolk County is present in very low concentrations, but in many cases at levels higher than the N.Y. State Department of Health standard of 7 parts per billion. It is anticipated that Aldicarb will not decompose easily in Long Island groundwater because of the acidity of this water. In addition, it is not known how much Aldicarb is still stored in the soil. Analysis for this chemical at such low levels is difficult to do and requires careful quantitative procedures, one to two days of work time, and sophisticated instrumentation. Evaluation of procedures to remove and/or degrade the pesticide to non-toxic products requires access to these analytical procedures. The difficulties inherent in the Aldicarb analysis make development of removal or degradation procedures for use by the domestic consumer a significant problem. The development and evaluation of procedures which could be used by community water treatment facilities require greater knowledge of the chemistry of degradation and further testing of available methods of removal. The lack of technical information available, and the current reporting of well-water analyses to individuals creates an atmosphere of fear and ignorance on the part of the public.

Objectives

To evaluate methods of Aldicarb removal which are being presented to homeowners as effective. To test and evaluate other methods of Aldicarb removal or degradation which have been used on other organic toxics. To investigate the chemical reactions of Aldicarb in dilute water solutions. To prepare information bulletins on the results of this research for use by Cooperative Extension and citizens groups.

Procedure

A joint research project has been awarded seed money by the Center for Environmental Research at Cornell University. The Co-Investigators are Dr. Ann T. Lemley, College of Human Ecology, Cornell University, and Dr. Gilbert Janauer, Department of Chemistry, SUNY at Binghamton. Professor Janauer will be investigating the hydrolysis (degradation) of Aldicarb on ion exchange columns. Professor Lemley will be investigating other methods of hydrolysis and will be testing methods suggested by companies who are selling devices purported to solve the problem. Professor Lemley will also be providing information through the Cooperative Extension network.
