TRENDS IN STREAM PESTICIDE CONCENTRATIONS IN THE MIDWESTERN CORN BELT AREA OF THE UNITED STATES, 1992-2006

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ABSTRACT

Corn and soybeans are the major agricultural crops produced in the United States, and more than 80 percent of the corn-for-grain acreage lies in 11 states in or adjacent to the Midwest Corn Belt. Substantial changes in use of a number of major pesticides in this area during 1992-2006 resulted from a combination of farmer preference, regulatory shifts, and the development of genetically altered crops for use in engineered crop/herbicide systems. These changes resulted in measurable trends in the concentrations of 9 major pesticides in 33 streams and rivers monitored during 1992-2006 as part of the U.S. Geological Survey's National Water-Quality Assessment Program. The variability and long-term trends in stream pesticide concentrations were assessed by use of a parametric regression model.

KEYWORDS

Surface water, streams, rivers, herbicide, pesticide, water quality, temporal trends, agriculture, Midwestern U.S., Corn Belt, Mississippi River Basin, Great Lakes, Missouri River Basin, Ohio River Basin

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