

● BASIC INFORMATION ABOUT PESTICIDES ●

# DO PESTICIDES CONTAMINATE OUR RIVERS, STREAMS, AND WELLS?

Pesticides are widely found in rivers, streams, and wells. In a recent national study, the U.S. Geological Survey found that over 95 percent of river and stream samples, as well as over 50 percent of well samples contained at least one pesticide. Many samples contained multiple pesticides. Both urban and agricultural areas have pesticide-contaminated streams and rivers.

New studies show that the relatively low concentrations of pesticides found in water can affect human and animal health.

**P**esticides are everywhere in our water resources and are frequently found when comprehensive surveys are made.

The best data about pesticide contamination of water come from the U.S. Geological Survey (USGS), a federal agency that is in the process of sampling river basins nationwide for pesticides. The data from the first phase of the project, encompassing 20 basins, are now available.<sup>1</sup>

The USGS looked for 76 pesticides and 7 pesticide degradation products. More than 95 percent of the water samples collected from streams and rivers contained at least one pesticide, as did about half of the well water samples. Mixtures of pesticides were common; over half of the stream samples contained over 5 pesticides, and about a quarter of the well samples had 2 or more pesticides.

Four common herbicides were frequently detected in agricultural areas: atrazine, metolachlor, cyanazine, and alachlor. Different herbicides were found in urban areas: simazine, prometon, 2,4-D, diuron, and tebuthiuron. Insecticides were more frequently detected in urban streams, and were rarely detected in well water. The four most commonly detected insecticides were diazinon, carbaryl, malathion, and chlorpyrifos.

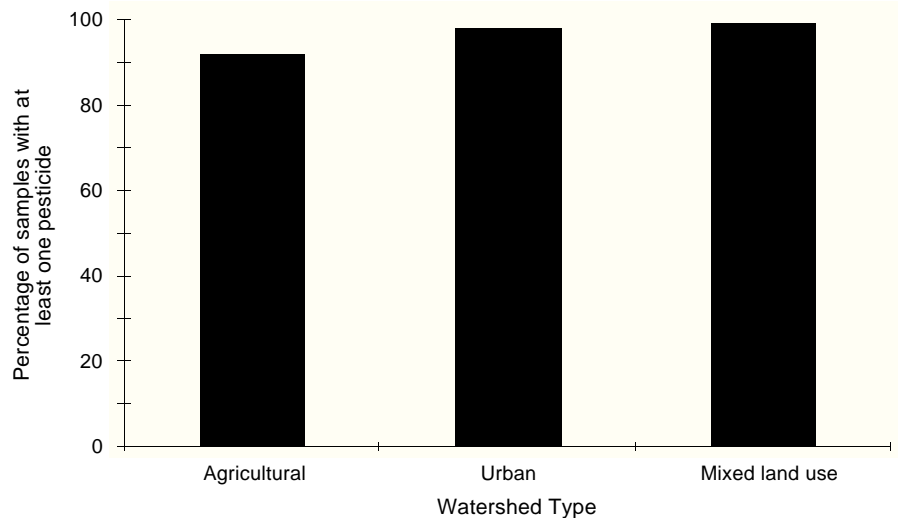
Although many of the pesticide concentrations measured by the USGS are relatively low, recent studies show that these pesticides are already causing health

problems for people and animals. For example, the numbers of low birth-weight babies in southern Iowa and the numbers of breast cancer cases in Kentucky were high in areas with pesticide-contaminated water.<sup>2,3</sup> Also, the USGS found that fish sex hormone ratios decrease with increasing pesticide contamination of rivers.<sup>4</sup> "Within all regions studied," the USGS concluded, fish already "may be experiencing some degree of endocrine disruption."<sup>4</sup> Clean water is essential for human and environmental health.

## References

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2. Munger, R. et al. 1997. Intrauterine growth retardation in Iowa communities with herbicide-contaminated water supplies. *Environ. Health Persp.* 105:308-314.
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Detection of pesticides during nationwide monitoring of rivers and streams



U.S. Geological Survey. National Water Quality Assessment Pesticide National Synthesis Project. 1998. Pesticides in surface and ground water of the United States: Summary of results of the National Water Quality Assessment Program (NAWQA). [www.water.wr.usgs.gov/pnsp/allsum/#1](http://www.water.wr.usgs.gov/pnsp/allsum/#1).