ASSESSMENT OF ATRAZINE WITHIN A KARST LANDSCAPE IN ROUGH RIVER LAKE RESERVOIR, KENTUCKY

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Abstract:

Atrazine, a herbicide used in the production of no-till corn, is a growing concern to the quality of drinking water for many rural water suppliers. Western Kentucky University's Hoffman Environmental Research Institute along with Kentucky Department of Agriculture and the University of Kentucky's Cooperative Extension Service were awarded a grant by the United States Environmental Protection Agency to do an assessment of atrazine levels in the Rough River Lake watershed (Kentucky) which encompasses 142 square kilometers. The Rough River Lake reservoir has four water treatment plants that are responsible for serving three counties with their water needs. Roughly 90 percent of the landscape of Rough River is composed of karst, with numerous sinkholes, caves, and sinking streams. One water treatment plant, Hardin County Number One, gets its entire water supply from two major springs, both with a combined drainage area of 48 square kilometers. Grab and stratified samples were collected from 18 locations within the study area. Sampling rounds were conducted on a 14-day cycle during the growing season and 28-day cycle during the fall and winter months. Results showed that five locations had over 3 parts per billion, the Environment Protection Agency's maximum contamination level for atrazine, for at least two sampling rounds. Two sites, Highway 259 and Walters Creek, recorded levels over 10 parts per billion. Sampling will continue through 2006 in the Rough River Watershed.