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## Low Level Detection of Atrazine in Bloomington-Normal Surface Water Sources

Michael McAvoy  
*Illinois Wesleyan University*

Stephen Hoffmann, Faculty Advisor  
*Illinois Wesleyan University*

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Poster Presentation P40

**LOW LEVEL DETECTION OF ATRAZINE IN BLOOMINGTON-NORMAL  
SURFACE WATER SOURCES**

Michael McAvoy and Stephen Hoffmann\*  
Chemistry Department, Illinois Wesleyan University

Atrazine is classified by the EPA as a restricted use pesticide for its high potential for groundwater contamination. The use of atrazine as a pesticide is restricted only to authorized, trained professionals. Even so, it is estimated that 76.4 million pounds are applied to crops annually. With the possibility of atrazine being applied to crops in the surrounding rural area of Bloomington-Normal present, a method to detect atrazine in natural surface water samples has been developed. Using gas chromatography-mass spectroscopy, a natural sample can be passed through a solid phase extraction cartridge, then eluted with methanol, which is then rotary evaporated to concentrate any organics present in the sample. This can then be injected into the GC-MS for separation and quantitation using a selective ion mode. Isotopically labeled atrazine is also added as an internal standard. Initial studies have shown detection limits as low as 1 ppm in scan mode and 0.1 ppm in selective ion mode. Coupled with the three order of magnitude increase in concentration in the extraction step, this corresponds to a detection limit of 0.1 ppb in the initial surface water sample. Previous studies using an alternate method (immunoassay) suggest that atrazine is present in Bloomington-Normal surface waters at sub-ppb levels (0.1-0.6 ppb). Natural samples from Evergreen Lake, Lake Bloomington, and the Mackinaw River will be collected and spiked in future studies.