

# AGRICULTURE

## Agriculture and Ground Water Quality in a Sugarcane Area in São Paulo State, Brazil

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### ABSTRACT

The region of Ribeirão Preto City located in São Paulo State, southeastern of Brazil, is an important and highly mechanized sugarcane producing area. It is also an important recharge area of the Guarany aquifer, which provides water to many cities, as well as to rural communities in the region. Research has been conducted in this region since 1985 to assess the behavior of herbicides, such as atrazine, simazine, ametryn, tebuthiuron, diuron, 2,4-D, picloram, and hexazinone, applied in the area. Nitrate applied as nitrogen fertilizer was also evaluated. Espraiado watershed, located over the recharge area, was chosen for this study. Water samples were collected from seven wells located inside the watershed and from surface water. Other samples were taken from city wells located at the edge of the recharge area with exception of the control, located in downtown. Results have shown that no residue of herbicides was found in ground water wells. Only nitrate was detected at levels close to Maximum Concentration Level (MCL) of 10 mg/L but in wells located in downtown, far away from the sugar cane area. Among the herbicides, only ametryn was found at levels higher than the MCL of 0.1 µg/L in surface water of the watershed.

**Keywords:** Agriculture, Ground Water, Nonpoint Source Pollution, Solute Transport, Water Quality