

105 - HERBICIDE LEACHING ON A RECHARGE AREA OF GUARANY AQUIFER, BRAZIL.

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The region of Ribeirão Preto city, located in Southeast of Brazil, Sao Paulo State, is an important sugarcane, soybean, and corn producing area with a high level of pesticide utilization. This region is also an important recharge area for groundwater supply of the Guarany aquifer. A survey has shown the following herbicides as the most commonly used in the area: atrazine, simazine, ametryn, tebuthiuron, diuron, and 2,4-D. In order to study a possible leaching of the herbicides into the aquifer, surface and ground water samples were collected during the years of 1996 to 2003 from different points. Groundwater samples were collected from sites near the river during the same period. It was used a GC-MS to detect and quantify the herbicides (gas chromatograph/mass spectrometry). The method was linear over the range of 0.02 to 2.0 µg/L. Analysis of tebuthiuron, diuron, atrazine, simazine and ametryn residues showed no significance amount of these products in ground water. Only two out of nine points of surface water collected in one year, presented ametryn concentrations above (0.17 and 0.23 µg/L) the allowable 0.1 µg/L, European safety level. It was also used the simulator model CMLS-94, "Chemical Movement Layered Soil" which indicated no leaching to the depths of the water table at 40m.