

FATE OF TEBUTHIURON HERBICIDE IN A RECHARGE AREA OF GUARANY AQUIFER IN SUGARCANE FIELD IN BRAZIL

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The region of Ribeirão Preto City located in São Paulo State, southeastern Brazil, is an important sugarcane, soybean and corn producing area. This region is also an important recharge area for groundwater of the Guarany aquifer, a water supply source of the city and region. The herbicide tebuthiuron (N-[5-(1,1-dimethylethyl)-1,3,4-thiadiazol-2 yl]-N,N'-dimethylurea) is regularly applied in the area. In order to understand the movement of tebuthiuron, laboratory studies were conducted at the Research Division of the Brazilian Department of Agriculture, Embrapa/Environment, Jaguariuna city, São Paulo State, Brazil. Tebuthiuron was applied at the recommended label rate for sandy soils at 1.0 kg ha⁻¹ a.i. with and without sugarcane coverage. Soil samples were collected at each 20 cm down to 120 cm and taken to the laboratory for determination of tebuthiuron. Tebuthiuron was measured at those depths mentioned before in ten intervals of time up to 300 days. Tebuthiuron half-lives varied from 69 days in sugarcane cropped area to 49 days in non-cropped area. After 180 days there were no measurable residues in the soil and tebuthiuron was not found below 40 cm depth in any time. This supports the lack of tebuthiuron residues found in groundwater in the monitoring program being performed in Ribeirão Preto. Tebuthiuron groundwater monitoring program is still on progress.

Key-words: agriculture, ground water, nonpoint source pollution, solute transport, water quality.