GROUNDWATER CONTAMINATION BY ORGANIC AND MINERAL COMPOUNDS IN CULTIVATION IRRIGATED WITH WASTEWATER

Marcelo Boamorte Raveli; João Antonio Galbiatti; Adriano Gerim Ribeiro; Dayuna Bemi Barense; Adivania de Souza Borges Nicoletti; Henrique Leal Perez

ABSTRACT

Organic and inorganic compounds may be found in wastewater which can contribute to environmental contamination. With the objective of characterizing and simulating the contamination of the percolated water in the soil, were analyzed lettuce crops fertilized with organic and mineral compounds, and furrows irrigated with wastewater. The experimental plots were constituted by thirty 500 L amianthus boxes with a surface area of 1 m2 per box filled with sifted soil with a bottom layer of broken stones. The results showed that organic and mineral incorporation promote changes at preexisting concentrations in percolating water that restock groundwater. The mean concentration of nitrate (20,3 mg L-1 de NO3-) indicates that the contamination spreads slowly in depth at agricultural soils and areas of organic and inorganic waste disposal, fact also verified for leachated sodium at depths greater than 60 cm. Microbiological analysis of water from 60 cm depth did not present fecal coliforms.

PALAVRA-CHAVE: groundwater, domestic sewers, organic matter, nitrate, sodium, fecal coliforms