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ESTIMATION OF RESIDUAL ANTIBIOTICS IN SOIL AND UNDERGROUND WATER OF AREAS AFFECTED BY PHARMACEUTICAL WASTEWATER IN LAHORE

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Drinking water is most essential thing for life on earth. Due to environmental pollution day by day the quality and quantity of drinking water is lowering. Ground water tables are becoming contaminated due industrial pollution. Contamination level of antibiotics namely ofloxacin (OFL), ciprofloxacin (CIP), levofloxacin (LEV), oxytetracycline (OTC), doxycycline (DOX) were quantified in soil and underground water of surrounding areas of pharmaceutical industry in Lahore. HPLC with DAD detector, C-18 column and solid phase cartridges were used to analyze antibiotic residues. In groundwater DOX has highest mean level of contamination and OFL was determined as highest contaminating pollutant in soil. Highest detected value in groundwater of OFL was 0.50, CIP and LEV 0.20, DOX 0.80, OTC 0.40 ng/L. Ground water have residual level of CIP 0.01 – 0.20 ng/L, LEV 0.02 – 0.20 ng/L, OFL 0.01 – 0.50 ng/L, OTC 0.02 – 0.40 ng/L, and DOX 0.04 – 0.80 ng/L. Ground water was contaminated by these residues is very important as it is source of accumulation of antibiotics to human and animal body as well as to plants.

Keywords: contamination, environment, ground water, residual antibiotics.

Introduction

The occurrence of pharmaceutical and health care substances in the aquatic environment has long been acknowledged as a health threat. Antibiotics excreted by human and animals, disposal of unused drugs, use of antibiotics for agricultural purposes and pharmaceutical effluents are considered as primary

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