

◆ Research Paper

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Pesticide Residue Pollution in the Groundwater System of Ishiagu and Potential Health Impacts

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Abstract: This study was initiated to examine pesticide residue in groundwater system in Ishiagu. Some objectives were also put forth to aid the achievement of the study aim amongst which are to; examine the quality of groundwater in Ishiagu, determine the type of pesticide residue in the groundwater system, determine the level of concentration of different kinds of pesticides residue in groundwater system and also determine the potential health effects of the consumption of pesticide residue concentrated water. Two hypotheses were tested in the study. The study used water samples from 5 wells located in different sub-communities; hence water quality analysis was done for physicochemical parameters of the water samples from the wells and after that for pesticide residue in the wells. The interest Physico-chemical parameters are; pH, Temperature (°C), Conductivity ($\mu\text{S}/\text{cm}$), Resistivity ($\text{m}\Omega$), Salinity (mg/l), Total Dissolved Solid (mg/l) and Dissolved Oxygen (mg/l) while the pesticide residues are; DDT, Gammaline, Altrazine, Carbonfuran, Eltrazine, Paraquat, Aldrin and Chlordane. Descriptive statistics and ANOVA were used to test the study hypotheses. The study showed that Conductivity amongst the physicochemical parameters tested was the only parameter that the wells' value exceeded the WHO acceptable limits. The study also showed that the water quality of the wells in Ishiagu is polluted and that the presence of DDT, Gammaline, Chlordane, Aldrin, Carbonfuran, and Altrazine in concentration level above the WHO acceptable level shows the potential impact of the consumption of water from the area. The study recommended Government intervention in potable water provision, having found

that the water available to the people is polluted, and Agro education and enlightenment in the area to ensure that pesticides are applied rightly in quantity and in accordance to land size.

Keywords: Pesticides, Residue, Groundwater, Health, Impacts



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