

Environmental Implications of Groundwater Quality in Irrigated Agriculture in Kebbi State, Nigeria

Authors : O. I. Ojo, W. B. R. Graham, I. W. Pishiria

Abstract : The quality of groundwater used for irrigation in Kebbi State, northwestern Nigeria was evaluated. Open-well, tube-well and borehole water samples were collected from various locations in the State. The water samples analyzed had pH values below the normal range for irrigation water and very low to moderate salinity (electrical conductivity 0.05-0.82 dS.m⁻¹). The adjusted sodium adsorption ratio values in all the samples were also very low (<0.2), indicating very low sodicity hazards. However, irrigation water of very low salinity (<0.2dS.m⁻¹) and low SAR can lead to problems of infiltration into soils. The Ca:Mg ratio (<1) in most of the samples may lead to Ca deficiency in soils after long term use. The nitrate concentration in most of the samples was high ranging from 4.5 to >50mg/L.

Keywords : ground water quality, irrigation, characteristics, soil drainage, salinity, Fadama

Conference Title : ICAEE 2014 : International Conference on Agricultural and Environmental Engineering

Conference Location : New York, United States

Conference Dates : June 05-06, 2014