Chemical Characterization of Rainwater at a Suburban Site of Indo-Gangetic Plain

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The present study reports the rainwater composition during the monsoon of 2009 at Dayalbagh (Agra) a sub urban site situated in semi arid region. The precipitation samples were analyzed for pH, conductivity, major anions (F^-, Cl^-, SO^{2-}_4, NO^-_3) and cations (K^+, Na^+, Ca^{2+}, Mg^{2+}, NH^+_4). The pH value varied from 6.5 – 8 indicating the alkaline nature of rainwater. Ratio of Total Anion to Total Cation is below 1. Scavenging ratio which describes the efficiency of scavenging of air pollutants was determined and found to be higher for Cl^- and NO^-_3 than SO^{2-}_4. The results of neutralization factor show that the major neutralizing components were $Ca^{2+}$and NH^+_4. About 74 to 84 percentile samples of rainwater have ratios of SO^{2-}_4/Ca^{2+}, NO^-_3/Ca and Mg^{2+}/Ca^{2+} similar to that of soil suggesting soil is the major contributor at this site. Good correlation among Ca^{2+}, Mg^{2+}, NO^-_3 and SO^{2-}_4 with one another may be due to the common occurrence of these species in soil. Good correlation of NH^+_4 with NO^-_3 and SO^{2-}_4 suggested that they are present in rainwater as NH_4NO_3 and $(NH_4)_2SO_4$.