B422 Chemical Properties of Acidic Soils in Yeocheon Area

Joon-Ho Kim, Hyeong-Tae Mun[1], Chang-Seok Lee[2],
Young-Han You, Kyu-Song Lee and Jong Wook Kim*
Department of Biology, Seoul National University,
Department of Biology, Kongju National University[1],
Department of Biology, Seoul Women's University[2]

The relationships among chemical properties of acidic soils were investigated in Yeocheon area, where soils were composed of Entisol (orthens) and Inceptisol (ochrept). Concentrations of SO_4^{2-} and basic cations such as exchangeable Ca^{2+}, K^+ and Mg^{2+} were directly proportional to soil pH values but concentrations of acidic cations such as exchangeable Al^{3+}, Mn^{2+} and Fe^{3+} were inversely proportional to soil pH. The results suggested that the high concentrations of H^+ and SO_4^{2-} should lead to acceralating leaching of basic cation or to increasing exchangeable Al^{3+} in acidic soils around Yeocheon industrial complex.

B423 A Simulation of Soil Acidification to Atmospheric Deposition in Seoul, Korea

Soon-Ung Park and Jong Wook Kim*
Department of Atmospheric Science, Seoul National University

To analyze the long-term dynamics of soil to atmospheric acidic deposition in Seoul, SMART (Simulation Model for Acidification's Regional Trends) model has been used, based on the concept of buffer ranges as introduced by Ulrich (1981). The model structure include various equilibrium soil processes and mass balance equations. The input data have been divided into source/sink terms, initial conditions of variables and parameters. System inputs are the atmospheric deposition and the net removal/release fluxes of S, N, base cations and water. The main driving variables are the atmospheric deposition of SO_2, NO_x, and NH_3. In order to demonstrate the model's behavior, four deposition scenarios were simulated and the results were compared with those of European countries.