

Abstract

The study was carried out on soil chemical equilibrium model for aluminum and manganese in paddy field at Phranakron Sri Ayutthaya province. This study consisted of 2 parts. The first part emphasized on the cations and anions concentration in soil solution when soil reaction (pH) was decreased. The second part was about soil chemical equilibrium model for determining dissolved aluminum and manganese concentration dissolved from as provided; Ayutthaya series (Ay) Tha Rua series (Tr) Khok krathiam series (Kk) Bang Pa-in series (Bin) Banglen series (Bl) and Watthana series (W)

The results showed that the cation concentrations (aluminum, manganese) were increased when pH was decreased. Soil series; Ayutthaya series (Ay) Tha Rua series (Tr) Khok krathiam series (Kk) Bang Pa-in series (Bin) Bang len series (Bl) and Watthana series (W) when the range of pH in soil between 6.15 - 6.25, 6.40 - 6.50, 6.40 - 6.70, 5.37 - 5.44, 4.71 - 4.78, 5.01 - 5.23 and 5.82 - 6.00 by soil chemical equilibrium model could determine concentration of aluminum in soil solutions 1.88 – 1.91, 1.84 – 1.85, 1.80 – 1.85, 2.15 – 2.18, 2.57 – 2.64, 2.26 – 2.39 and 1.95 – 2.00 ppm by soil chemical equilibrium model could determine concentration of manganese in soil solutions 0.65 – 0.73, 0.48 – 0.54, 0.36 – 0.54, 1.64 – 1.77, 3.41 – 3.68, 2.08 – 2.65 and 0.86 – 1.06 ppm, respectively. There was no significant difference. It is also possible to soil chemical equilibrium model. To predict the solubility of aluminum and manganese from the soil solution. This model should be used for proper soil management in future.