

DISTRIBUTION AND DYNAMICS OF GIBBSITE AND KAOLINITE IN NA OXISOL OF SERRA DO MAR, SOUTHEASTERN BRAZIL.

FURIAN, S.; BARBIERO, L.; BOULET, R.; CURMI, P.; GRIMALDI, M.; GRIMALDI, C. Distribution and dynamics of gibbsite and kaolinite in na oxisol of Serra do Mar, southeastern Brazil. **Geoderma**, v. 106, p. 83-100, 2002.

RESUMO

In the Serra do Mar region, in southeastern Brazil, the soil mantle is mainly characterised by (i) a gibbsite saprolite, (ii) various kaolinitic horizons within the gibbsite material, (iii) kaolinito-gibbsitic topsoil horizons. This organisation does not match with the thermodynamic stability of gibbsite and kaolinite accompanying the solution percolation through soil profiles. A study of the micromorphological, mineralogical and chemical properties of the soil mantle reveals that this organisation arises from the in situ development of the soil from the crystalline bedrock. The bauxitic weathering of the bedrock, even if it is rich in quartz, can be explained by a fast renewal of the solutions and/or a high solubility of the kaolinite. Recycling of Si and Al by the forest can maintain a dynamic equilibrium of kaolinite in the topsoil horizons, as observed in Amazonia. The kaolinitic compact horizons evolve upslope at the expense of the gibbsitic material. At the contact between kaolinitic and gibbsitic material, dissolution patterns of quartz and gibbsite are observed, indicating that this evolution is in process. These observations and the organisation of the soil mantle set the problem of the apparent stability of gibbsite and kaolinite in this environment.