The Geochemistry of Alkali and Alkaline Earth Metals in Soils of the Central Province of Sri Lanka.

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ABSTRACT

The geochemistry of alkali and alkaline earth metals in soils is controlled by two competing processes. These processes are: (a) release of cations during the leaching of primary minerals during their alteration to clays, (b) exchange and adsorption of these elements by secondary clays which have already formed. The geochemical maps of alkali and alkaline earth metals in soils of the Central Province of Sri Lanka show that the dry and mid country intermediate zone soils are enriched in these elements compared to the wet zone soils. The high cation exchange capacity of soils and high adsorption capacity of 1:2 structural type clays (i.e. illite) in the dry and mid Country intermediate zone soils enhance the exchange and adsorption of released cations by secondary clays. This process is not well marked in the wet zone soils which contain kaolinite and gibbsite of 1:1 type and single sheet structures, and of low cation exchange capacity.

Thus, the observed variation in the the geochemistry of alkali and alkaline earth metals in soils of the Central Province of Sri Lanka is attributed mainly to the soil chemical properties, stability of host minerals of the area and the climate.