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Clay Minerals of Argiustolls Upper Southwestern Mountainous Region, Saudi Arabia

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SOILS of Argiustolls associate some stable landscapes fonned on chlorite schist within upper southwestern mountainous region. Soil profiles are deep and have marked horizonation as the following sequence: mollic epipedon. argillic horizon and soil parent material.

The clay mineral assemblages of these soils are mainly chlorite, kaolinite. smectite, vermiculite and traceable amount of hydrous mica associating surface horizons. Most of smectite mincrals were dctected in the fine clay of soil solum with maximum amounts at Bt horizons. Coarse clay is dominated by kaolinite and chlorite whereas smectite and venniculite are in traceable or low amounts.

Chlorite is relicts of the parent rock. It is distinctively higher in Chorizons and decrease in A and Bt horizons. The decrease of chlorite in soil solum coincides with marked increase in both kaolinite and 2: I layer lattice clay minerals. The latter could be considered as intennediate phase through the kaolinization process durina alteration and degradation of chlorite. Differences in mineralogical composition between horizons of soil profiles- are partly ascribed to pedogenesis.