GEOCHEMISTRY OF ROCK ALTERATION AND PEDOGENETIC EVOLUTION IN THE REGION OF LAVRAS, MINAS GERAIS, BRAZIL

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Studies of rock alteration and pedogenetic correlation were carried out in profiles of soils with argilic horizons in the region of Lavras, Minas Gerais, Brazil, to evaluate the geochemical behavior during process of soil formation. Three profiles formed from geologic material litogeochemically differentiated were selected: Dark-Red Podzolic formed from dioritic rocks (Diorito Rosário), Red-Yellow Podzolic developed from granitic rocks (Granito Itutinga) and Reddish Brunizem formed from basic rocks of the Greenstone-belt of Lavras. Throughout the layers of each profile, from the consolidated rock until the solum, geochemical analyses of major elements - main oxides, 14 trace elements and rare earth elements (REE) were performed to study the behavior of these elements during pedogenesis and evaluate gains and losses through the mass chemical balance. The results showed for the major elements a moderate loss of SiO2, leaching of bases and a slight relative enrichment of Al, Fe and Ti. The leaching order of these elements from the profiles were also established. For the trace elements analyzed, despite their great mobility, it was possible to group them into classes according to this mobility by characterizing losses, relative enrichment and gains throughout the weathering profiles: class I - moderate-high mobility elements, characterized for loss since consolidated rocks until the solum; and class II - moderate mobility elements with relative enrichment and occasionally real in the Bt horizon, because of the limitation of the mobility from co-precipitation with iron oxides. For the REE, the work showed a great mobility throughout the weathering evolution.