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### **Influence of relief on mineralogical development in soil in the semi-arid region of Pernambuco, Brazil**

Juliet Emília Santos de Sousa<sup>1</sup>; Alexandre Ferreira do Nascimento<sup>2</sup>; Marcelo Metri Corrêa<sup>3</sup>; Valdomiro Severino de Souza Júnior<sup>1</sup>

<sup>1</sup>Departamento de Agronomia, Universidade Federal Rural de Pernambuco, Rua Dom Manuel de Medeiros, s/n, Dois Irmãos - CEP 52171-900, Recife, PE, Brazil<sup>1</sup>; <sup>2</sup>Empresa Brasileira de Pesquisa Agropecuária - Embrapa Agrossilvipastoril, Rodovia dos Pioneiros MT-222, Km 2,5, Zona Rural Caixa Postal: 343, CEP: 78550-970, Sinop, MT, Brazil<sup>2</sup>; <sup>3</sup>Universidade Federal Rural de Pernambuco, Unidade Acadêmica de Garanhuns, Av Bom Pastor, s/n, Boa Vista - 55292270, Garanhuns, PE, Brazil<sup>3</sup>

Semi-arid environments occupy a large part of the terrestrial territory, are characterized by quite characteristic climatic conditions, with low rainfall and high temperatures. The soils existing in this landscape are categorically characterized as little weathered, and predominantly rich in bivalent minerals, showing the climate as a preponderant formation factor, forgetting the importance of the others. From these theories, this study was carried out with the purpose of proving the fundamental influence of the relief and drainage condition on the formation of minerals in the semi-arid environment and consequent evolution of soils. Physical, chemical, mineralogical and petrographic analyzes were carried out, being proved the predominance of processes of monovalentization and bivalentization in the region. The studied soils are formed from materials of very similar composition, being of great importance for the mineralogical development of the same. All the chemical, physical and mineralogical characteristics are reflections of the materials of origin of the studied profiles. It is clear after all studies that the formation of minerals is directly linked to the position of the soil in the landscape, being the soils with greater drainage propitious to the formation of minerals 1: 1 (kaolinite), and the soils with less drainage conducive to the formation of minerals 2: 1 (smectite).

**Keywords:** kaolinite, smectite, hydrolysis, landscape, drainage.



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<https://www.21wcss.org>  
[21wcss@21wcss.org](mailto:21wcss@21wcss.org)  
[commercial@21wcss.org](mailto:commercial@21wcss.org)