SOME PHYSICO-CHEMICAL RELATIONSHIPS FOUND IN FOUR EROSIVE SOILS OF THE PIEDMONT PLATEAU REGION

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The claypan nature of the B horizon of the Iredell, White Store, Helena, and Orange soils of the Piedmont Plateau Region, linked with their apparent susceptibility to severe erosion, suggested a comparative study of their profiles. The results of this study were presented in thesis form (10). An analysis of the data obtained in this investigation reveals some significant relationships existing between certain physical and chemical properties of these soils. These relationships, with some of the supporting data, are presented and discussed herein.

Certain information on the chemical composition of these soils is essential to interpret properly some of the relationships which are pointed out. Several important differences and points of similarity among this group of soils are best shown by the derived molecular values in Table 1.

Recognizing the danger of too much reliance on a total mineral analysis of soils, it seems that this method of expressing the composition data on an activity basis (molecules of the different minerals per unit weight of the soil) as suggested by Marbut (7), makes the picture less deceptive and the data more easily interpreted. The molecular equivalents show evidences of translocation of iron and aluminum compounds better than the percentage composition data, as it is usually expressed.

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3Figures in parenthesis refer to "Literature Cited", p. 9.