

PHYSICAL AND CHEMICAL NATURE OF COASTAL LATERITE IN KALUTARA, SRI LANKA

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Laterite formed under warm climates is a secondary formation more widespread in the tropical regions of the world. As a tropical country, Sri Lanka is also characterized with this mineral formation mostly identified in the low country wet zone. This secondary formation is resulted by weathering specially in the areas where continuous wet and dry conditions are prevailed. The objective of the study is to demarcate the geographical distribution of laterite in the coastal region of Kalutara district while studying the chemical nature. Field observations were made to collect the data on spatial distribution of the laterite in the study area while studying the characteristics of them. Some samples were collected from selected locations for elemental analysis by X Ray Fluorescence (XRF). The distribution maps were prepared using Arch Map 10.8. The results reveals that the surface exposure of laterite is dominated in higher elevated areas rather low relief areas where the laterite is chiefly distributed in underground. The exposure of laterite over most of the surface area is too severe to form a ferricrete crust. The areas where this hard pan is occurred show low growth of vegetation. Newly cut fresh surfaces show a soft nature hence those laterites can very easily be scratched. The honey comb nature is dominated in old exposures in soil profiles. A rust layer on the water surfaces of dug wells are also dominantly observed. It is well noted fact that the chemical nature with ferric oxide is significantly high in laterite observed in southern part of the area form that of in northern area. Hence, the red colour gradually increases. Dominated chemistry of the samples collected is ferric oxide (29.9%), aluminium oxide (23%), silicon dioxide (8.17%), titanium dioxide (2.54%), and magnesium oxide (1.35%). High nature of silica indicates that the chemical nature of predecessor of laterite should be acidic.

Keywords: Physical and chemical nature, Coastal Laterite, Kalutara, Ferric Oxide, surface exposures

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