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Soil Fertility Gradient in the Restinga Ecosystem

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The restinga ecosystem (coastal plain vegetation) can be termed as a set of plant communities that suffer strong influenced by fluvial and marine factors and is characterized as an ecosystem of great biological diversity, therefore, represents areas of great importance in the context of ecological preservation. The degradation processes from many forms of anthropogenic disturbances that has taken place since the colonization of the country, made studies on the characterization and dynamics of soil fertility of these areas even more important in relation to the maintenance of its biodiversity and conservation. The sites studied were the Cardoso Island and Comprida Island, and in these, we analyzed four physiognomies, restinga, low restinga, dune and antedune (from continent to ocean). Chemical analyses were performed and soil salinity in these areas in depths 0-5; 0-10; 0-20; 20-40; 40-60 cm. In all soils the cationic exchange capacity was intimately associated with the concentration of soil organic matter, which makes this parameter essential to the maintenance of soil fertility of these areas; in more superficial layers (0-20 cm) there was an increase of pH and base saturation and decline of organic matter, aluminum saturation and cationic exchange capacity in the nearby sea, physiognomies what determines the existence of fertility gradient towards the continent-coast; restinga forests showed a chemical standard that is heavily marked by sandy texture, high degree of leaching, nutrient poverty, low base saturation, high saturation by aluminum and acidity, opposite conditions to soils of the dunes and antedunes, with the exception of sandy texture; despite the existence of a chemical gradient of fertility among the physiognomies studied it is possible to determine the soil acts more strongly as a physical support than as provider of fertility; as for salinity, soil collected in Cardoso Island did not present salinity in any depth, a fact which can be explained due to intense washing these soils are exposed and associated with highly sandy texture what favors the leaching of salts throughout the profile. Comprida Island soils presented salinity in some ante dune that can be explained due to the geographical position that determines a system of frequent wetting of the soil by the sea water and thus facilitating the accumulation of salts in the profile.