



Soil Fertility Management for Restinga Forest

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The sand coastal plain vegetation (Restinga Forest) has been described as an ecosystem associated with the Atlantic Forest, constituted of mosaics, which occur in areas of great ecological diversity, particularly the features of the soil which partly influence the forest, therefore assigned the edaphic community. This work had intended to propose management actions for soil of restinga forest recovery, according to the comparative assessment of soil fertility under high, low, low degraded and without restinga forest. Studies on soil fertility were made in depths from 0 to 5, 0 to 10, 0 to 20 and 20 to 40 cm for high, low, degraded soil and without restinga forest vegetation in the Cardoso Island, Cananéia-SP, with five repetitions. For each layer were analyzed: pH, organic matter (MO), P, K, Ca, Mg, Al, S, H + B, Al, Cu, Fe, Mn, Zn, saturation by aluminum (m), sum of bases (SB), exchange capacity of cations (CTC), saturation of bases (V%), clay and root system distribution. Vegetation of restinga is a typical formation that occurs in the sandy coastal plains soils in the Brazilian coast with high nutrient deficiencies, belonging to the orders of SPODOSOLS and QUARTZIPSAMMENT. Even with the observed differences for contents of MO and CTC soil under high, low, low, degraded and without restinga forest, the values of saturation of bases (V) not differed among themselves in the depths studied. This indicates that the quantities of cations (K, Ca and Mg), representing the sum of the bases (SB) in relation to soil CTC (SB + H + Al), are present in the same proportion in all type of vegetation and to all depths. In practice, this means that, although the CTC on the surface is higher, as well as the content of MO, the percentage of cations present is always low, giving it low values of V% and indicating low fertility throughout the profile, since most of the CTC is occupied by aluminum. The values of V% were between 10 and 15%. We can say that the main parameters of soil fertility under forest of restinga are associated with high acidity, organic matter levels, which is responsible for CTC, since the levels of clay are lower than 4%, and low reserve of nutrients. Such considerations underline the fact the restinga be considered an edaphic community, in which soil plays the decisive role in the development of the forest. On the other hand, it was noted that the concept of low natural fertility may not apply in the study of soil-vegetation interactions in natural ecosystems, since very low levels of nutrients, aluminum saturation around 60% and bases saturation below 15% do not explain the exuberance of low and high restinga forest. Probably, the concepts of ecological succession groups can be applied for the low and high restinga forest where species with lower nutritional requirements become the majority population. However, the management of soil fertility in degraded soils of restinga must satisfy primarily the elevation of the ability to retain nutrients, as well as the permanent availability of nutrients in the early years of development of vegetation. However, quantitatively the nutritional approach should be investigated for this ecosystem.