LEGUMINOSAE SPECIES DISTRIBUTION IN AN ALTITUDINAL GRADIENT ALONG ATLANTIC OMBROPHILOUS DENSE FOREST IN THE SERRA DO MAR STATE PARK, SÃO PAULO, BRAZIL.

Theme: Biodiversity conservation indicators

Edson Dias da Silva,Leonardo Dias Meireles,Ana Maria Goulart de Azevedo Tozzi

Studies on floristic and structural variations of forests in relation to the altitude have contributed to the knowledge of the patterns and causes of plants spatial distribution in the Atlantic Forest. Geographical variables as latitude, longitude and altitude result in some different forest formations for this biome, but the altitudinal limits among them is not a consensus. In the North Atlantic Coast from São Paulo state the variation in altitude range from the sea level to 1,279 m of altitude on Ombrophilous Dense Forest in the Serra do Mar mountain range. In order to check out the potential of the Leguminosae family as indicator of different vegetation types was realized an extensive field work along that altitudinal gradient. A matrix was constructed with the altitudinal amplitude occurrence of species in 13 different altitudinal belts: one between 0-10 meters and twelve with 100 meters of amplitude to evaluate the richness, taxonomic diversity and the floristic similarities between the belts. A total of 142 species belong 45 genera and 3 subfamilies were collected. The greatest species richness was observed in the Restinga Forest (RF: 84 spp {0 – 10 m}) following by Lowland Ombrophilous Dense Forest (LODF: 48 spp. {10 – 100 m}), and Montane Ombrophilous Dense Forest (MODF: 43 spp {800-1,100}). The Restinga Forest has the higher taxonomic diversity (3.905), followed by LODF (3.845) and by MODF 800-900 m belt (3.814). The highest altitudinal belt between 1,100 and 1,200 m showed the lowest richness (08 spp.). The LODF (10-100 m) showed the largest number of tree species (34 spp.). Cluster analysis revealed dissimilarity of the belts 0-10 m and 1,100-1,200 m in relation to the others, whereas similarity was highest within three distinct groups: 10-400 m, 400-800 m, and 800-1,100 m. For tree species the Correspondence Analysis (CA) suggested a strong substitution of tree species along the gradient with 51.6% of inertia. Some tree species have characterized certain formations and have their preference habitat located at a specific altitude, as the case of *Abarema brachystachya*, *Inga subnuda*, *Inga vera*, *Machaerium triste*, *Machaerium oblongifolium*, and *Macrosamanea pedicellaris*, all of them found only in the RF, and *Inga lanceifolia*, *Ormosia minor*, and *Swartzia flaemingii*, which occur only in the MODF, above 800 m altitude. The occurrences of Leguminosae species suggested a different altitudinal limit for sub-montane and montane forests and a narrow occurrence of upper montane forest in this region.

Key-words: atlantic rain forest, altitudinal gradient, multivariate analysis, forest formation

Acknowledgements

We thank to the Program BIOTA/FAPESP, Projeto Temático Gradiente Funcional (03/12595-7) and the Fundo de Amparo ao Ensino e a Pesquisa no Exterior (FAEPEX) partial funding of the project.