

Biodiversity of Prokaryotes from High-Elevation Grassland Organosols of the Parana State, Brazil

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The High-Elevation Grasslands of the Atlantic Mountain Range, and the First, Second and Third Plateau cover 14% of the Parana State area and contain hydromorphic soils consisting primarily of organic matter, called organosols. In this work, the Atlantic Mountain Range and Second Plateau organosols, with large geographical distance, distinct geological history and similar ecological roles, were selected for prokaryotic diversity investigation. Total DNA of the both soils was extracted and used as template with specific oligonucleotides primers for the amplification of *nifH*, a marker gene for diazotrophs and 16S rRNA, for Bacteria. Analysis of RFLP profiles of *nifH* and 16S rRNA amplicons revealed that the Atlantic organosol had higher total bacterial diversity and lower diazotrophic diversity than the Second Plateau organosol. 16S rRNA gene libraries from both organosols were constructed and sequenced. Analysis with the RDP-II database showed the predominance of the Acidobacteria phylum in both environments (≈ 45%). Moreover, in the Atlantic Mountain Range's library the following phyla was also found: Proteobacteria (21%), Bacteroidetes (11%), Firmicutes (6%), Actinobacteria (2%) and unclassified (15%). In the Second Plateau's library, the diversity was restricted to Proteobacteria (15%), Chloroflexi (1%) and unclassified (39%). The highest diversity in the Atlantic Mountain Range is consistent with the profile obtained in RFLP analysis. These results show that despite the floristic similarities, the bacterial communities of the analyzed organosols present structural differences.

Key words: biodiversity of prokaryotes; high-elevation grassland organosols; *nifH*; 16S rRNA.

Supported by: CNPq and Fundação Araucária