

***Canoparmelia texana* lichenized fungi as bioindicator of atmospheric pollution in São Paulo city, Brazil**

A. Fuga¹, M. Saiki¹, M.P. Marcelli²

1. Instituto de Pesquisas Energéticas e Nucleares, IPEN/CNEN-SP, São Paulo, Brazil
2. Instituto de Botânica, Seção de Micologia e Liquenologia, IBt, São Paulo, Brazil

Epiphytic lichens are known as good accumulators for a variety of elements. Thus they have been widely analyzed for monitoring atmospheric particulate matter and deposition allowing comparisons between contamination levels in geographically different areas. In 2002 a research was started at the Neutron Activation Analysis Laboratory of Ipen aiming to use *Canoparmelia texana* lichenized fungi for a passive monitoring in several sites of São Paulo city, where the governmental air quality control agency (CETESB) operates an automatic networks with monitoring stations. This communication presents results obtained in the analysis of *C. texana* species collected in January 2004 in the following sampling sites of São Paulo city: Santana, Congonhas, Parque do Ibirapuera, Cerqueira César, Pinheiros, São Caetano do Sul, Santo André (Centro), São Miguel Paulista and Santo André (Capuava). Lichen samples from clean places were also collected at the Atlantic Forest, São Paulo state. Samples were collected from the bark trees and at the laboratory they were cleaned, washed using purified water, freeze-dried and ground to obtain a fine powder. Instrumental neutron activation analysis has been applied to analyze these samples. Samples and elemental synthetic standards were irradiated under a thermal neutron flux from IEA-R1 nuclear reactor for short and long periods. After appropriate decay times, the gamma activities induced to the samples and standards were measured using a hyperpure Ge detector coupled to a gamma spectrometer. The elements Ca and K were obtained at percentage levels, Al, Ba, Br, Cl, Cu, Fe, Mg, Mn, Na, Rb, V and Zn at $\mu\text{g g}^{-1}$ levels and the elements As, Cd, Co, Cr, Cs, La, Sb, Sc and Se at ng g^{-1} levels. Comparisons were made between the results obtained for lichens from sites of different levels of pollution. Samples from São Paulo city presented higher elemental concentrations than those obtained for ones from clean areas. Besides differences in the elemental concentrations were verified between the samples collected in distinct sites of São Paulo city. Analytical quality of the results was checked by analyzing IAEA 336 Lichen and Mixed Polish Herbs from INCT reference materials.