

Air pollution monitoring at the Environmental Specimen Bank of Germany: spruce and pine shoots as bioindicators

M. Rossbach,
R. Jayasekera

Abstract

An investigation has been carried out to study the pattern of heavy metal abundance in buds, needles, twigs and cones from single trees and to compare the results with the integrated (composite, homogenized) ESB material of the same origin. It has been evident that (i) pine and spruce shoots are comparable in terms of the pattern of trace element abundance with the exception of Ni, Ba, Sr and Pb, (ii) twigs contribute substantially to the overall concentration of the homogeneous material, and (iii) heavy metal concentrations are remarkably different in samples from remote and industrialized sampling sites. To distinguish the influence of soil at different sampling sites on the overall concentration levels, an extensive investigation using chemometrical data evaluation has still to be carried out.