
Mercury and other trace elements contamination of the urban area of Mexico City: Use of *ficus benjamina* as biomonitor

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Abstract

Environmental concerns regarding mercury contamination has greatly increased based on its toxicity and its ability to bioaccumulate in the environment. The anthropogenic emissions are leading to a general increase of mercury in the environment. Urban areas are particularly affected since they are exposed to wide diversity of sources, where fuel combustion is considered as one of the main sources of pollution.

The deposition of atmospheric particles is often evaluated in terms of metallic content found in environmental monitors. Tree leaves have long been considered good biomonitors.

This work presents the concentration of mercury and its relationship with other trace metals deposited on *Ficus benjamina* leaves, collected in the metropolitan area of Mexico City, in areas exposed to heavy vehicular traffic. Mercury concentration varies between 16.99 $\mu\text{g kg}^{-1}$ and 61.65 $\mu\text{g kg}^{-1}$ (average 36.4 \pm 13.06 $\mu\text{g kg}^{-1}$), comparable with the values reported for other urban areas in the world.

Mercury is well correlated with all analyzed metals (Cr, Co, Cu, Ni, Sb, V, Zn) except with Pb, suggesting that they may be attributable to the same pollution source.

For the first time, the correlation between Hg and other traffic related metals is shown, suggesting that vehicular traffic represent an important Hg source. This comes relevant since there are more than 5 million vehicles in the urban area of Mexico City.