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Differences between tree species in foliar accumulation of PAHs in forest fragments, São Paulo – Brazil

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Polycyclic aromatic hydrocarbons (PAHs), present in atmospheric particulate matter, are highly toxic and persistent in the environment. The present study evaluated the accumulation of PAHs in the vegetation foliage aiming to inventory and evaluate the forests input of PAHs in region subjected to air pollution from industrial in combination with other sources. This study evaluated the accumulation of 14 PAHs in leaves of two tree species *Piptadenia gonoacantha* (Mart.) J.F.Macbr. and *Croton floribundus* (L.) Spreng. covered four forest fragments located in Campinas, Cosmopolis, Holambra and Paulinia cities during the dry (Jun-Sep 2011) and rainy season (Oct-May 2012). The PAHs leaves were extracted in soxhlet for 24 hours with organic solvents (dichloromethane+hexane) and analyzed by HPLC-fluorescence. The results suggest differences in accumulation between leaf tree species, finding higher foliar concentrations of total PAHs in *P.gonoacantha*, which also presented seasonal differences, with the highest concentrations found in the dry season. Comparisons between the local trends showed higher total concentrations in samples from Paulinia forest compared to the other places in both periods. Higher concentrations of benzo-g,h,i-perylene, emission gasoline vehicles, were found in samples of *C. floribundus* from Campinas forest, which is inserted between two highways. *P.gonoacantha* accumulated more pyrene and chrysene, abundant compounds generated burning biomass emissions, in Holambra forest samples, place inserted in sugarcane area. The compound benzo(a)pyrene, a carcinogenic risk marker to humans, was detected at all sites, but at lower concentrations than the other PAHs. Possible markers of emission sources must be used carefully because mixtures containing PAHs are complex and some of these compounds can degrade more easily than others. The continued study may clarify trends and markers of possible sources here shown.

Key words: PAHs, particulate matter, foliar accumulation, *P.gonoacantha*, *C. floribundus*.

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