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Study of Urban environmental quality through Isotopes δ13C

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Usually, trees with similar pH values on their bark develop epiphytes of similar species, the acidity to be a factor for growth. The aim of the study was evaluate the air quality through isotope δ13C in order to define the levels of environmental quality in the city of Queretaro, Mexico. In this work were collected at least 4 epiphytes positioned in trees of the species Prosopis Laevigata at 25 sites of Queretaro City. The samples were analyzed for trace elements with an inductively coupled plasma atomic emission spectroscopy (ICP). The collecting took place during dry period, in May and early rain June 2011 period, and on four sectors to identify the spatial distribution of pollution, using isotopic analysis of concentration of δ 13C. According with the results there are significant differences among the species in each of the sampled areas. The 5 February Avenue presented greater diversity and richness of δ13C, followed by those who were surveyed in the proximity of the UAQ and finally in the middle-east area. An average value of δ13C-17.92%, followed by those surveyed in the vicinity of the UAQ that correspond to sector I and II with an concentration of δ13C-17.55% and δ13C-17.22%, and finally the samples collected in trees scattered in the East-Sector II and IV with a value of δ13C-17.02% and δ13C-15.62%, respectively. Also were observed differences between the dry and wet period. It is likely that these results of δ 13C in moist period reflect the drag of the isotopes due to rain events that could mark a trend in the dilution of this element, however there is a trend in terms of abundance and composition of finding more impact in those species sampled in dry period, in May and early June 2011.