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The effect of seasonality on the production of essential oils from leaves of *Eugenia uniflora*

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Eugenia uniflora L., popularly known as “cherry”; refers to a highly adapted to urban environments species and highly contaminated by airborne pollutants. In this sense, a comparative study of the content of essential oils present in the leaves of *E. uniflora* specimens occurring in the metropolitan region of São Paulo and in the municipal park at Mogi Cruzes-SP as well as the study of chemical composition in different seasons, can allow a better understanding of the contribution of each of these variables in the production of secondary metabolites. The chemical analysis of the different leaf extracts by GC/MS of 2 individuals of *Eugenia uniflora* showed a difference in the chemical profile due to its location as well as the seasonality. Regarding the essential oils, it was possible to observe that the samples collected in Mogi das Cruzes (São Paulo- Brazil) Park show a greater diversity of secondary metabolites than the samples that occur in the vicinity of the School of Arts, Sciences and Humanities (USP-Campus Leste), which is located in the Tietê Ecological Park, in the vicinal of the Ayrton Senna highway. The data showed a greater diversity of secondary metabolites in the oil samples extracted in the Tietê Park region. The greater contact with the atmospheric gases like CO₂ emitted by the means of transport, can serve as source of C for the production of secondary metabolites. The higher production of the secondary metabolites during the winter and spring seasons, can be associated in the transference of the essential oils to the leaves for the pollination process. The low production of secondary metabolites during summer is possibly associated with high water precipitation during this season, which removes much of the CO₂ from the atmosphere, thereby decreasing the supply of C to produce the compounds.

Biography

Miriam Sannomiya has completed her PhD from University of Campinas and Post-doctoral studies from São Paulo State University at Araraquara. She is an Assistant Professor level 2 at this University since 2008. She worked with the natural products' research in her Masters', PhD and Post-doctoral studies. She has experience in Organic Chemistry with emphasis on chemistry of natural products, mainly in the following subjects like bioprospecting of natural products (*Fabaceae*, *Malpighiaceae*, *Byrsonima*, *Lonchocarpus*, *Platymiscium*, *Machaerium*, flavonoids and galloylquinic acid derivatives) and effects in the production of secondary metabolites. She is a Professor at Graduate Program in sustainability at the School of Arts, Sciences and Humanities since 2017. She has published more than 40 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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