



A STUDY OF THE VOLATILE ORGANIC COMPOUNDS PRODUCED BY PLANTS OF DROSERA FAMILY

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Carnivorous plants are a class of plants capable of attracting, capturing, and digesting small animals to obtain nitrogenous compounds, which are essential for the synthesis of chlorophyll and other metabolites. Since they live in nutrient-poor soils, these organisms have developed, over the course of evolution, strategies to capture their prey more effectively, such as the use of chemical attractions and physical traps. Plants of the Droseraceae family are known for having glandular trichomes that secrete a sticky substance capable of capturing their prey and holding them until digestion occurs^[1]. Thus, this work aims to extract and analyze volatile compounds present in the mucilage produced by the tentacles of three species of the Droseraceae family: *Drosera intermedia*, *Drosera graomogolensis* and *Drosera hirtella*. For this purpose, several extraction attempts were carried out, including dynamic headspace, solid-phase microextraction (SPME), manual collection with a capillary tube, and solvent dipping extraction, to identify the profile of volatile compounds present in the plant's excretion as a way to better understand its attraction mechanism. After gas chromatography analysis of the various extraction methods mentioned earlier, the results suggest that *D. intermedia* is the plant with the highest expression of volatile compounds, due to the predominant presence of a naphthoquinone known as plumbagin in its extracts. The other species presented only trace compounds; therefore, it is necessary to develop methodologies to achieve a greater concentration of the compounds in order to carry out proper structural elucidation. As reported in the literature^[2], the compound found in *D. intermedia* may be related to the plant's defense mechanism against predators due to its high redox potential; however, there are no studies on its possible influence as a potential attractant to insects.

Keywords: Droseraceae, Carnivorous plant, Gas chromatography, volatile compounds.

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[1] FERREIRA, D. T. et al. Antimicrobial activity and chemical investigation of Brazilian *Drosera*. *Memorias do Instituto Oswaldo Cruz*, v. 99, p. 753-755, 2004.

[2] NAJAFPOUR NAVAEI, M.; et al. Chemical composition of the essential oil of *Plumbago europaea* L. roots from Iran, *Flavour Fragr. J.*, 20, 2, 213-214, 2005

