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EXPLORATORY STUDY OF VOLATILE NATURAL PRODUCTS FROM A LAMIACEAE SPECIES

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The Lamiaceae family is the sixth largest group of angiosperms and includes many familiar aromatic herbs, such as rosemary, thyme, and oregano, which are commonly used as spices. In addition to their extensive use in the food industry, species from this family have been traditionally employed in medicine for centuries, largely due to their diverse biological activities.¹ In this context, the World Health Organization highlights the importance of investigating Lamiaceae plants with a well-documented history of use and validated therapeutic properties in order to uncover additional biological activities and potential pharmacological applications.² Another relevant application of this family lies in agricultural pest management, since the development of sustainable pesticides is increasingly necessary.³ Small bioactive molecules, such as monoterpenes and sesquiterpenes, hydrocarbons and oxygenated compounds, can be isolated from Lamiaceae species.⁴ In the present study, volatile compounds from a Cerrado species of the Lamiaceae family were investigated using two different approaches: dynamic headspace and essential oil extraction, the aim of conducting an exploratory analysis of their natural products and contributing to the growing body of research on Lamiaceae species. The resulting extracts were characterized by GC-MS to compare their chemical profiles. The dynamic headspace showed higher proportions of monoterpenes, including α -thujene, α -pinene, and sabinene, whereas essential oil extraction resulted in a larger proportion of sesquiterpenes, such as β -caryophyllene, germacrene D, and caryophyllene oxide. In conclusion, the method employed plays an important role in determining the volatile compounds extracted. Future investigations should focus on the biological properties of these compounds to determine their potential applications.

Keywords: Natural products, Lamiaceae, cerrado, volatile extraction, essential oil, terpenes

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