10th Brazilian Conference on Natural Products
XXXVI RESEM
4-7 November 2025, Belo Horizonte, MG, Brazil

CHEMICAL COMPOSITION OF COUROUPITA GUIANENSIS FRUITS (LECYTHIDACEAE)

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Couroupita guianensis exhibits high phytochemical complexity, producing a wide variety of secondary metabolites responsible for its diverse pharmacological activities. These bioactive constituents are distributed across different parts of the plant, including the fruit pulp. This chemical diversity not only reinforces the multifunctional medicinal value of the species but also raises relevant questions regarding its biosynthetic pathways, ecological roles, and potential technological applications. The fruits of *C. guianensis* represent a public safety issue, since, when ripe, they detach from the trunk and may cause accidents. Pruning is an alternative, but it leads to the accumulation of organic waste in landfills. Despite the limited chemical studies available, it is known that the pulp of this species is rich in indigo and other structurally related compounds. The valorization and utilization of this material have been directed toward the study of indigo and related alkaloids. The reuse of organic waste is directly related to several Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda. In this context, the present work aims to explore the reuse of *C. guianensis* Aubl. (Lecythidaceae) fruits, popularly known as “abricó-de-macaco” (monkey apple). This Amazonian-origin tree is widely available in urban centers and throughout the UFRJ campus. The pulp of ripe fruits collected at the UFRJ Fundão campus was extracted with water. The material was lyophilized and subsequently partitioned by Soxhlet extraction using hexane, acetone, and methanol (in increasing order of polarity). The isolated substances were analyzed by thin-layer chromatography (TLC) and gas chromatography coupled to mass spectrometry (GC-MS), and subsequently sent for ^{1}H NMR analysis. The fermentation step of the fruit pulp of *C. guianensis* proved to be crucial for increasing the indigo content in the crude extract, in addition to contributing to the reduction of the overall process time. The isolation method adopted allowed the recovery of some alkaloids, including indigo.

Keywords: *Couroupita guianensis; Indigo; Secondary metabolites; Soxhlet extraction; Sustainable reuse.*

SHARMA, R. et al. Phytochemical complexity of *Couroupita guianensis*: secondary metabolites from flowers, bark, leaves, pulp, and seeds. *Journal of Pharmacognosy and Phytochemistry*, v. 12, n. 6b, p. 14774, 2023. DOI: 10.22271/phyto.2023.v12.i6b.14774.