



Chemical prospect of different Annonaceae species

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INTRODUCTION

Plant foods are essential sources of macro- and micronutrients and have bioactive properties that can lead to the discovery of new products. The plant family Annonaceae (the Soursop family) occurs in tropical to subtropical regions of all continents and comprises 122 genera and ca. 2440 species. The economically important genus *Annona*, including mainly *Annona muricata*, *A. squamosa*, and *A. senegalensis* belongs to the Annonaceae family, which is used for food, wood, firewood, medicines as well as cosmetics. These species are rich in proteins, fibers, minerals and bioactive compounds that are nutritionally beneficial, with significant health benefits, especially in emerging countries.

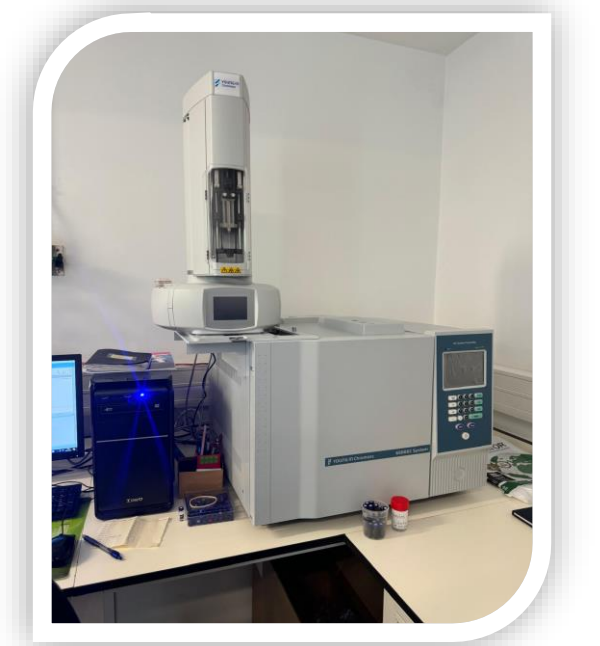
OBJECTIVE

This study aimed to provide a chemical characterization of *A. muricata*, *A. senegalensis*, and *A. squamosa* fruits, promoting their use as food and medicine by local populations in emerging countries.

MATERIALS AND METHODS

The samples were collected in the provinces of Malanje and Cuanza Sul, located in the North and South regions of Angola, respectively.

AOAC procedures and chromatography techniques were employed to determine the proximal (lipids, ash, proteins, carbohydrates and energy), chemical (free sugars, tocopherols and fatty acids) composition, respectively.



RESULTS

CHEMICAL COMPOSITION

Fructose, glucose, and sucrose were identified in both species with *A. squamosa* holding the higher content of fructose and glucose (16.88 g/100 g dw and 13.07 g/100g dw, respectively), followed by *A. muricata* (11.50 g/100g dw and 12.70 g/100g dw, respectively), and *A. senegalensis* (9.80 g/100g dw and 8.63 g/100 g dw, respectively). Also, 24 fatty acids were identified, among which C16:0 (31.20%) were present primarily in *A. muricata*, and C18:1n9c in both *A. squamosa* and *A. senegalensis* (24.48 and 44.77%, respectively). Regarding tocopherols, the alpha isoform was detected in all species, with *A. muricata* and *A. squamosa* presenting the highest amounts, while gamma- and delta-tocopherol were only detected in *A. senegalensis* (0.81 and 0.57 g/100g dw, respectively). These results validate and support the use of these species as a source of nutrients with potential benefits to be included in the population's daily diet.

PROXIMAL COMPOSITION

A. senegalensis had the highest protein content (15.56±1.6 g/100 g dw), *A. muricata* (7.31±0.7 g/100 g dw) and *A. squamosa* (5.17±0.5 g/100 g dw). The highest energy value was identified in *A. senegalensis* (432.3 kcal/g/100 g dw) followed by *A. muricata* (412.79 kcal/g/100 g dw) and *A. squamosa* (407.16 kcal/g /100 g dw).



A. muricata



A. squamosa



A. senegalensis

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The approach presented by our study, as well as the data provided on *Annona* species native to Africa, allow for the optimization of the use of natural plant resources in this region, contributing to achieving some of the Sustainable Development Goals of the 2030 Agenda. study provides data for the promotion of alternative food sources, thus meeting goals 2 (Zero Hunger) and 3 (Health and Wellbeing). Furthermore, the information provided will enable the sustainable use and maintenance of target plant species, thus fulfilling Objective 15 of the agenda (Life on Earth).

