

Potential of the Brazilian Cerrado Fruits in Food Science and Nutrition

Henrique Silvano Arruda*

Bioflavors and Bioactive Compounds Laboratory, Department of Food Science, School of Food Engineering, University of Campinas, São Paulo, Brazil

***Corresponding Author:** Henrique Silvano Arruda, Bioflavors and Bioactive Compounds Laboratory, Department of Food Science, School of Food Engineering, University of Campinas, Monteiro Lobato Street, Campinas, São Paulo, Brazil.

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The Brazilian Cerrado is the second largest biome from Brazil and South America occupying about 2 million km² (approximately 25% of Brazilian territory) [1]. Cerrado, the most characteristic biome of Brazil, is considered as one of the 25 sites of greater biodiversity in the world and its species include about 30% of the total existing in Brazil. It is estimated that the Cerrado shelters around 12,356 naturally occurring species among herbaceous, arbustive, arboreous and vine plants, of which 11,627 species are native and approximately 44% are endemic [2]. The potential of species found in the Brazilian Cerrado is enormous since its seeds, flowers, fruits, leaves, roots, barks, latex and resins are used as food, drugs (more than 220 plant species), utensils, tools and handicrafts [2].

The Brazilian Cerrado fruits have been used since early days of occupation of this region and nowadays they are seen as true regional culinary treasures [3]. Many Cerrado fruit species are potential sources for economic exploration, as they show high nutritional value (high levels of sugars, proteins, fatty acids, minerals, carotenoids and vitamins) and attractive sensory characteristics (unique and intense colours, flavours and aromas). These characteristics make the Brazilian Cerrado fruits very suitable for use as food or natural food additives [4].

In addition, many Brazilian Cerrado plants have caught the attention of consumers, industries, research institutions and health agencies, and are being welcomed onto the world market as functional and nutraceutical foods. The Cerrado flora faces a variety of adverse biotic (e.g., continuous attack of insects and pathogenic microorganisms) and abiotic factors (e.g., acid soil, excessive sun exposure, high temperatures and burnings during the dry season). Thus, these plants developed adaptations during their evolutionary process to resist the oxidative stress caused by these conditions, the main ones being the increase of the synthesis and activity of enzymes and phytochemicals, especially antioxidants. These compounds derived from the secondary metabolism of such plants exert several biological activities among them antioxidant, antihypertensive, anti-inflammatory and anti-mutagenic activities, which can prevent or delay the development of various diseases [2,5].

Despite these evidences, only the local people consume these fruits as fresh fruits or in juices, ice creams, jellies and jams. The limited consumption of these fruits is partly due to scarce knowledge regarding their potential, and the processing and quality of the processed foods obtained from them. In order to overcome this limitation, some studies have already been conducted with the goal of employing Brazilian Cerrado fruits in the development of products. Breads, snack bars, ice creams, yogurts, nectars, candies, refreshers, jams, wines, and others formulations showed high acceptability in sensory tests, demonstrating the potential of these fruits to enter in the food industry. However, public policies must be developed in order to facilitate the access to information, the products development and the distribution of these fruits and their derivatives to the diverse consumer markets.

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