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### The gums of Amazonian biodiversity and their potentials: the case of buriti tree gum (*Mauritia flexuosa*).

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#### ABSTRACT (upto 300 words)

Gums, or polysaccharides, are complex carbohydrates, soluble in water, which can form gels and mucilages. They have high molar mass and can be formed by galactose, arabinose, rhamnose, xylose, galacturonic acid, among others. They have gelling characteristics, thickening, moisture retention, emulsification and stabilization. Polysaccharides are widely used in the formulation of food products, due to their wide versatility. Its diversity of applications is closely linked to its chemical structures. The characterization of structural molecules allows the knowledge of the properties of polysaccharides or glycoconjugates. The buriti gum is a polysaccharide found in the exudate of the trunk of the plant. It is composed of arabinose, xylose, galactose, galacturonic acid, and acetyl groups. It has a high carbohydrate content (96.2%) and is an arabinogalactoxyylan. It is thermally stable and can withstand up to 200°C without degrading. Buriti gum presents itself as a Newtonian fluid at low concentrations and pseudoplastic at higher concentrations. Moisture sorption isotherms showed type II and there was a decrease in moisture with increasing temperature. The rheological and colloidal behavior of the gum indicates versatility for technological applications. Integral sorption properties indicate that the surface tension increases with water adsorption. In summary, buriti gum can be considered a promising alternative for technological applications due to its viscosity, thermal stability, rheological, and colloidal properties.

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#### BIOGRAPHY (upto 200 words)

Dr. Diego Aires da Silva holds a PhD in Food Science and Technology from the Federal University of Pará (2017) and a degree in Food Engineering from the same university (2010). He has worked as a professor at the Professional Education Center of the Amazon, mainly teaching about Total Quality Management, Total Productive Maintenance, and Food Technology. Currently, he is Associate Professor I at the Department of Food Technology (DETA) at the University of the State of Pará (UEPA). He served as Coordinator of the UEPA/Cametá University Campus (2016-2019), and currently coordinates the Food Technology Course at UEPA (2020-present). He is a researcher at the University of the State of Pará, primarily focusing on biotechnological production of polyhydroxycarbonates, degradation of lignocellulosic materials for the production of simple sugars, by-products, and second-generation bioethanol. Characterization study of Amazonian polysaccharides and their applications. Production and technological innovation in food processing and transformation and value addition. Extraction and quantification of bioactive compounds in foods, their antioxidant capacity, in vitro bioavailability, and technological applications.