



## PHYSIOCHEMICAL PROPERTIES OF THE PULP AND ALMONDS OF TUCUMĀ (*Astrocaryum vulgare Mart*) FOR OIL PRODUCTION

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**ABSTRACT:** Tucumā (*Astrocaryum vulgare Mart*) it is a palm tree commonly found at the Amazonian forest of firm earth, it produces nutritious fruits, quite appreciated by the local population. The seeds are for the obtaining of eatable olive oil and soap, the endocarp is employee for the local population in the making of earrings, rings, bracelets, necklaces and other workmanships. This species has occurrence also in Acre, Rondônia, Pará, Mato Grosso, Roraima, Trindad, Guyana and Bolivia. The objective of this work was to accomplish mechanical tests on the fruits with the purpose of studying the rupture of the shell and the whole income almonds and to obtain the impact loads in tucumā fruits. It was also characterized biochemical compositions of the pulp and the almond seeking the use for the other ends. The physiochemical parameters analyzed were: moisture content, fats gray, total protein, fiber, carbohydrate, calorie, fats acids and vitamins, just in the pulp: vitamin E, vitamin B1, vitamin B2, vitamin B5, vitamin B3, vitamin B6, vitamin B12, vitamin C, vitamin D3 and vitamin E. The obtained results revealed that the maximum force of rupture was of approximately 6200 N for the direction apex-insert and 7200 N for the perpendicular direction; then this the tucumā fruit with high shell hardness when compared to the other types of chestnuts, being necessary studies to design machines capable to promote mechanical breaking and thus facilitating, its commercial exploration. The pulp of the tucumā fruits, presented a significant amount of fats (32%), following by carbohydrates (19,7%) and fibers (18,4). The caloric value was of 380 Kcal/g. Also the pulp presented good amount of vitamin B3 (niacin - 76,7%) and C (acid ascorbic - 23,6%). In relation to the fat acids the pulp presents contents of acid oleic (C18.1) about 72,8% following for linoléico (C18.2), being a good product for the human and animal feeding,. In the almond 24,2% of fiber, 10,7% of fats, 17,0% of carbohydrates and 4,3% of total protein were found. The caloric value was around 180 kcal/g. The difference between these values and other from literatures. Was observed probably the nutritional values of the tucumā vary so much with the variety as with the maturation stadium in that is the fruit. The almond of the tucumā presented contents of 50,82% of C12 (láurico)e 24,98% C14 (miristico). It is a quite interesting and very spread fruit among the local communities, especially in lands that already suffered human actions, as the introduction of pastures and where its crop in extraction areas, not causing this way, larger damages to the forest.

Key Words: rupture force, fat acid, oil