



PHYSICAL-CHEMICAL CHARACTERIZATION AND TECHNOLOGICAL AND THERMAL PROPERTIES OF TAMARIND (*TAMARINDUS INDICA* L.) FROM THE CERRADO OF GOIÁS, BRAZIL

Karen Carvalho Ferreira^{1*}, Márcio Caliarí¹, Juliana Aparecida Correia Bento¹, Marília Cândido Fideles¹, Manoel Soares Soares Júnior¹

¹ *Department of Agronomy, University Federal of Goiás, Campus Samambaia, Goiânia/Nova Veneza Highway, Km 0, 74690-900, Goiânia, Goiás, Brazil.*

**karencarvalho1@hotmail.com*

<https://doi.org/10.34302/crpjfst/2019.11.3.9>

Article history:

Received:

18 February 2018

Accepted:

28 March 2019

Keywords:

Calorimetry,

Tamarind pulp,

Tamarind seeds,

Tamarind shells.

ABSTRACT

Brazil is a country with different biomes and the Cerrado is known for its rich resources and flora. Among the fruits in the Cerrado, we can highlight the tamarindeiro, whose fruit, tamarind, exhibit excellent nutritional quality. Tamarind is enough explored on the continent of origin (Africa), however surveys involving all utilities of the plant are still insignificant. So, the objective of the work was to characterize shells, pulp and tamarind seeds of the Cerrado, Goiás, as to physico-chemical, technological and thermal properties. The collected fruits obtained average proportions of $22,2 \pm 1,1\%$ shells, $44,0 \pm 2,4\%$ pulp and $14,4 \pm 1,6\%$ seeds, and approximately 20% fibers. It presented high carbohydrate content and low water activity for the three portions and lower values of ash, lipids and proteins. The shell and seed flours presented high content of total dietary fiber and fruit pulp presented acid pH ($3,02 \pm 0,01$) and high titratable acidity ($29,82 \pm 0,24$). The seed flour had a water absorption and solubility index greater than the shell flour, and lower oil absorption index. The tamarindo pulp presented 4 peaks in your thermogram, being the first relative to the gelatinization of starch, 2 and 3 peaks suggested the formation of carbohydrate-lipid complexes and protein denaturation and 4 peak the glass transition. Tamarind shell and seed flour showed similar behavior to pulp after 115 °C, with 2 endothermic peaks. Concluded that the integral tamarind fruit has specific physico-chemical, nutritional, thermal and technological characteristics and suitable for use in the food industry.