



## Flour Functionality, Physical and Chemical Properties Of Cookies From Processed Tamarind Seed Composited With Whole Wheat Flour

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### Abstract

Tamarind (*Tamarindus indica* L.) is an indigenous tropical African tree plant whose seed is rich in protein and antioxidants with great potentials for food applications. However, the seed currently has limited food uses and has remained a by-product of the tamarind pulp industry. In this study, tamarind seeds were processed (pressure cooked, oven-roasted and microwave-roasted) and the resulting flours were composited with wheat flour at a 6% level for cookie production. The level of addition was selected from a previous study where 6% was found to be the most acceptable by consumers. The functional properties of the processed flours, physical properties of the cookies including texture, proximate composition and antioxidant properties of the cookies were determined using standard methods. Flour from cooked tamarind seed showed the highest water absorption capacity (WAC) (520%), but the lowest oil absorption capacity (OAC) (76%), compared to flour from oven-roasted (WAC = 291%; OAC = 132%), microwave roasted (WAC = 118%; OAC = 105%) and the wheat flour control (WAC = 276%; OAC = 132%).

Processed tamarind flours had higher total phenolic contents (1.72-2.71 mg GAE/g) compared to the whole wheat flour (1.26 mg GAE/g). The same trend was observed for the cookies but with lower values compared to the flours from which the cookies were prepared. Cookies enriched with roasted tamarind seeds showed higher antioxidant activities than the control wheat cookies. Cookies enriched with roasted tamarind seeds had similar hardness values (approx. 5 N) to the control wheat cookies (6 N), but cookies enriched with cooked tamarind seed showed a significant increase in hardness (10 N). The protein content (15.52-17.25%) of enriched cookies was significantly higher than that of the whole wheat cookies (14.28%). Results from this study have shown the possibility of enhancing the value of tamarind seed by exploring the processed seeds in cookie enrichment. Results from this study have further shown the possibility of enhancing the value of tamarind seed by exploring the processed seeds in cookie enrichment.

### Biography: Dr Adewumi T. Oyeyinka

Dr Adewumi T. Oyeyinka is an emerging researcher with about eight years of experience in teaching and research activities at various universities including University of KwaZulu-Natal (UKZN), South Africa, University of Johannesburg, South Africa and Kwara State University, Nigeria. She holds a bachelor's degree in food science from Ladole Akintola University of Technology, Nigeria, master's degree from

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