

## Development of Spicy-Snack Incorporated with Palmyrah (*Borassus Flabellifer*) Tuber Flour

R.A.H. Udari<sup>1\*</sup>, J. Mary<sup>2</sup> and K. Kemashalini<sup>1</sup>

<sup>1</sup>Department of Biosystems Technology, Faculty of Technology, University of Jaffna, Sri Lanka

<sup>2</sup>Palmyrah Research Institute, Kandy Road, Jaffna, Sri Lanka

\*1996udari@gmail.com

Palmyrah tuber flour has the similar properties of gluten which can be used in bakery industry. However, it is still underutilized and the feasibility of applying the flour in bakery products is not deeply studied so far. This study analysed the possibility of using unboiled Palmyrah raw tuber flour as a partial replacement of wheat flour and formulate a spicy-snacks (SN). Two trials were done, one was to select the suitable flour ratio and another was to select the suitable baking temperature for SN. In the first trial three treatments were done by changing Palmyrah tuber flour and wheat flour ratio as, T1; 3:1, T2; 1:1 and T3; 1:3 respectively. Second trial was done by changing baking temperature as 150 °C, 160 °C and 170 °C while keeping the baking time constant as 10 minutes. The 5 point hedonic scale sensory test was used and attributes such as crispiness, texture, appearance and aroma were evaluated by thirty semi trained panellists. Results revealed the treatment T3; 1:3 as best mixtures and 160 °C as suitable baking temperature. Triplicates of formulated SN were Proximate analysed for using AOAC 2000 procedures. Moisture content, water activity and acid insoluble fat were found  $2.8\pm 0.03\%$ ,  $0.296\pm 0.06\%$  and  $0.2\pm 0.04\%$  respectively and these values were within the limits indicated in SLS 256: 210. Developed spicy-snacks were stored in low density polyethylene (LDPE), high density polyethylene (HDPE) and metalized polypropylene (MP) bags and parameters such as moisture, water activity and TPC test were monitored in 14 days interval for the shelf life studies. Moisture, water activity and TPC of SN inside the MP bags showed lower value as 3.23%, 0.42 and  $3.36\times 10^3$  CFU/g respectively after 28 days. Results revealed that SN was more stable in MP bags. Further studies can be done to increase the utilization of Palmyrah tuber flour in the baking industry.

**Keywords:** Bakery, Metalized polypropylene, Palmyrah tuber flour, Spicy-snacks