

FORMULATION AND PRODUCTION OF COOKIES USING COMPOSITE FLOUR OF WHEAT, PUMPKIN AND *OLU* SEEDS, AND QUALITY EVALUATION

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Abstract

This study investigated the quality parameters of cookies made from the composite flour of wheat (*Triticum aestivum*), pumpkin (*Cucurbita maxima*), and *olu* (*Nymphaea pubescens* Wild) seeds in different ratios were used for the formulation and preparation of cookies. Treatments were the control, (wheat flour only T1), and composite flour (wheat: pumpkin: *olu* seeds flour) at 70:5:25 (T2), 70:10:20 (T3), 70:15:15 (T4), 70:20:10 (T5), and 70:25:5 (T6). The developed cookies were tested for proximate composition, physical, microbiological analysis, shelf life and sensory evaluation. Seven-point Hedonic scale using 30 semi-trained panellists. The best sensory attributes were possessed with cookies treatment 3 (T3). Incorporation of pumpkin flour and *olu* seeds flour has increased crude fat, crude fiber, protein and ash by 32.18%, 5.78%, 11.51% and 5.82% respectively compared to control. Free fatty acid and carbohydrate contents were high in the control treatment (0.50% and 58.64%). Sodium, Calcium, potassium, phosphorus, and iron content were 73.51, 80.55, 63.95, 53.15, and 0.83 mg/100g, respectively in the mineral profile. Shelf-life studies were observed over two months under refrigerator (4 °C) and at room temperature (25-30 °C). In the physical parameters, there was a significant increase in mean diameter, thickness, and volume, and a slight decrease in mean spread ratio. No microbial contamination was observed in any treatment. Cookies developed using treatment 3 (T3) possessed substantial nutritional constituents, sensory appeal and shelf life other than the control and other treatments. Therefore, composite flour of wheat, pumpkin and *olu* seed at 70:10:20 ratio could potentially be used for the formulation of cookies with additional health benefits.

Keywords: Cookies, Hedonic scale, Pumpkin flour, *Olu* seeds flour

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