

**DEVELOPMENT OF GREEN TEA FLAVOURED BISCUIT
WITH SESAME SEEDS & OATS**



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ABSTRACT

The present study focused on the development of a functional biscuit by incorporating green tea powder, sesame seeds, and oats as partial replacements for wheat flour. Green tea powder is rich in bioactive compounds, particularly catechins, which possess strong antioxidant and antimicrobial properties, contributing to both health benefits and product stability. Sesame seeds serve as a valuable source of healthy fats, proteins, essential minerals, and natural antioxidants, while oats provide dietary fibre, β -glucan, and various micronutrients.

Five formulations (T₁–T₅) were prepared by varying the proportions of green tea powder, sesame seeds, and oats, with T₁ serving as the control (100% wheat flour) and other treatments were prepared based on wheat flour substituted with (T₂) GT- 5g, SS- 5g, Oats- 5g; (T₃) GT- 10g, SS- 8g, Oats- 5g; (T₄) GT- 8g, SS- 5g, Oats- 4g; (T₅) GT- 3g, SS- 2g, Oats- 2g. The biscuits were evaluated for sensory characteristics, including colour, taste, aroma, texture, and overall acceptability using a 7-point hedonic scale. Physical parameters such as diameter, thickness, spread ratio, and hardness were determined, along with proximate composition analyses for moisture, ash, fat, protein, fibre, and carbohydrate contents. Among all formulations, T₃ containing 10 g of green tea powder, 8 g of sesame seeds, and 5 g of oats was identified as the best-performing sample based on sensory evaluation, exhibiting superior acceptability among panellists. T₃ also demonstrated enhanced nutritional properties, with higher protein ($12.25 \pm 0.00\%$), fibre ($1.48 \pm 0.003\%$), and ash ($0.89 \pm 0.07\%$) contents compared to the control. Microbiological analysis confirmed that the developed biscuits remained safe and stable under standard storage conditions. The findings indicated that the incorporation of functional ingredients significantly influenced both the structural and textural characteristics of the biscuits, supporting the potential of T₃ as a nutritionally improved and consumer-acceptable functional biscuit.

Keywords: Functional biscuit, Green tea powder, Nutritional quality, Sesame seeds, Oats, Sensory evaluation.

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