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DEVELOPMENT AND SENSORY EVALUATION OF HEALTY BISCUITS INCORPARATING KIRI ALA (*Xanthosce sagitifolia*) FLOUR

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Abstract: Biscuits are a widely consumed ready-to-eat baked snack that is made by using wheat flour, fat, and sugar as main ingredients. Although the association of wheat consumption with health issues such as celiac disease leads to exploration of composite flours in biscuit production. This study was aimed at developing a healthier biscuit with high sensory attributes by incorporating Kiri Ala (*Xanthosoma sagittifolium*), a flour rich in dietary fiber, vitamins, and minerals. Kiri Ala is also well known for its potential health benefits, such as lowering blood sugar levels and reducing the risk of cardiovascular diseases. Biscuit formulations were prepared using Kiri Ala flour, wheat flour, sugar, eggs, Astra, corn flour, baking powder, and salt. Four treatments were developed by changing the proportions of Kiri Ala flour (50%, 40%, 30%, and 25%) and wheat flour (0%, 10%, 20%, and 25%), while keeping the percentages of other ingredients constant. Sensory evaluation was conducted using a five-point hedonic scale with 30 untrained panellists. The biscuit containing 25% Kiri Ala flour and 25% wheat flour was selected as the best formulation through Friedman test analysis, emphasizing significant differences ($P < 0.05$) in sensory attributes, including colour, appearance, taste, texture, aroma, and after-taste. This formulation had a moisture content of $3.5 \pm 0.2\%$ and an ash content of $0.2 \pm 0.34\%$. Also, aerobic plate count and yeast and mold count did not exceed the limit, which fulfils the SLS specification for biscuits during the 60 days storage period. The incorporation of 25% Kiri Ala flour resulted in an innovative biscuit product with a bunch of health benefits, offering potential to meet the growing market demand for healthier biscuits.

Keywords: Kiri Ala, Wheat flour, Sensory evaluation