The Effect of Mung Bean Flour and Chicken Liver Substitution on Zinc Content, Moisture Content, and Acceptability of Biscuits as Supplementary Food for Stunted Toddlers

Zaid Muhammad Hisyam

Clinical Nutrition Study Program

Health Department

ABSTRACT

Stunting remains one of the major chronic nutritional problems in Indonesia, highlighting the need for nutritious food innovations, including Supplementary Feeding (PMT) products. Mung bean flour and chicken liver are local food ingredients with the potential to improve the nutritional quality of fortified biscuits. This study aimed to analyze the effect of mung bean flour and chicken liver substitution on zinc content, moisture content, and consumer acceptability of fortified biscuits as supplementary food for stunted children. A Completely Randomized Design (CRD) with one factor, five treatment formulations, and three replications was employed. Zinc content was determined using Atomic Absorption Spectrophotometry (AAS), while moisture content was analyzed using a Moisture Analyzer. Sensory acceptability was evaluated by 30 semi-trained panelists. Zinc data were analyzed using the Kruskal–Wallis test, whereas moisture content data were analyzed using One-Way ANOVA followed by Duncan's Multiple Range Test. The results showed that mung bean flour and chicken liver substitution had no significant effect on zinc content ($p = 0.083$), but significantly affected moisture content ($p = 0.011$). All biscuit formulations were generally accepted by the panelists, with sensory attributes ranging from neutral to like. Based on the overall evaluation, formulations T4 were identified as the most promising formulations due to their balanced nutritional value and sensory acceptability.

Keywords: *chicken liver, biscuit, mung bean flour, stunting, supplementary feeding, zinc.*