Antioxidant Potential, Proximate and Mineral Analysis of Selenium Enriched Functional Food (Cheese)

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Abstract

Functional foods are foods that offer additional health benefits that extend beyond their nutritional values. Cheese a nutritious dairy product; have garnered significant attention due to their nutrient-rich profiles, including high-quality protein, essential vitamins and minerals. *Lactobacillus paracasei* is a lactic acid bacterium that plays a crucial role in cheese production. Selenium deficiency can lead to various health issues, and optimal intake appears to have protective effects against certain diseases. This study aimed at enriching cheese with selenium, investigating the nutritional values and the antioxidant potential of the cheese produced. Cheese samples were produced with *L. paracasei* and enriched with selenium using standard procedures. Viability tests were done using pour plate method. Proximate and mineral content were analysed. Antioxidant activity measured using DPPH assay. *L. paracasei* remained viable in 4 mM concentration of selenium and cheese was produced. Proximate analysis revealed variations in moisture, crude protein, fat, ash, crude fiber, and carbohydrate content among the cheese samples. Selenium enriched cheese had higher content of ash (0.70%), crude fiber (16.13%), protein (22.40%) and moisture content (26.75%). Mineral analysis showed significant differences in selenium, calcium, iron, potassium, and sodium levels, with selenium-enriched cheese. Antioxidant activity demonstrated a concentration-dependent increase in scavenging capacity. The cheese enriched with Selenium demonstrated improved nutritional composition and extended shelf life.

Keywords: *Functional food, Cheese, Selenium, Lactobacillus paracasei, Nutritional values.*