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Proximal and Organoleptic Analysis of Developed Product from Germinated Quinoa for Enhancement of Gut Microbiome in Lactating Mothers

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ABSTRACT

Introduction: Lactation and pregnancy lead to increased metabolic needs and stress of the mother due to physiological changes in the body, which further influences the maternal gut microbiome. Germination enhances the nutritive value, bioavailability and digestibility of quinoa. Germinated quinoa volunteer for the gut microbial population and is known to reduce oxidative stress in lactation.

Aim: The present study aimed to develop a value-added germinated cookie product from germinated quinoa to enhance the gut microbiome of lactating mothers in the age group of 20- 40 years.

Materials and Methods: Germinated quinoa cookies were developed by germinating the quinoa for 48 hours in different concentrations such as T1 (30 g) and T2 (40 g). Sensory evaluation was done by 9-point hedonic scale. Data was statistically analysed by using SPSS version 24.

Results: The results revealed that the germinated quinoa cookie with 40% of germinated quinoa was highly accepted in all parameters, namely, taste (29.7%), appearance (40%), colour (46.7%), texture (43.3%) and overall acceptance (56.6%). The proximal analysis of the highly acceptable products was energy (479.08 kcal), protein (7.97 g), carbohydrate (60 g), fat (22.46 g), fibre (7.96 g), iron (5.08 mg) and calcium (117.32 mg).

Conclusion: The study concluded that the germinated quinoa cookie with 40 g of germinated quinoa was highly acceptable. The present study is beneficial in enhancing the gut microbiome of lactating mothers and reducing the oxidative stress of the individual.

Keywords: Gut microbiota, Germination, Oxidative stress

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