

Utilization of Soymilk Residue for the Production of Nutritionally Enriched High-Fiber Biscuits

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Soymilk residue is a by-product of soymilk and tofu production having a low economic value. It contains high protein and fiber as well as various minerals and phyto-chemicals. The objective of the present research study was to substitute soymilk residue for wheat flour in biscuit production in order to enhance value of soy milk residue and increase protein and fiber content of the biscuits. The biscuits were prepared from blends of the wheat flour and soymilk residue. The different ratios of soft wheat flour to Soy milk residue used were 100:0, 90:10, 70:30 and 50:50 (w/w), respectively. The different biscuits produced were nutritionally analyzed. It was observed that all the samples contained desirable proportions of protein (12.9-30.6%), fat (0.83-2.16%), fiber (0.26-0.92), and digestible carbohydrates (38.8-67.6%). Protein, fat, fiber and digestible carbohydrate contents increased with the increase in the amount of soy milk residue added. Sensory evaluation results indicated that all the biscuits had high sensory ratings for all the attributes evaluated. The sensory evaluation showed no significant ($p > 0.05$) differences between the whole wheat flour biscuits and the 30% soymilk residue supplemented product in terms of the sensory attributes of aroma, internal texture, taste and overall acceptability, but differences were significant ($p < 0.05$) in shape and crust texture. The result also showed that the biscuits substituted with 30% soymilk residue were the most acceptable ($p < 0.05$) and its protein and fiber content increased up to 24.2% and 0.72%, respectively. Soymilk residue obtained could be utilized to substitute wheat flour up to 30% in the biscuits production to increase protein, fat and fiber content with high consumer acceptability.

Keywords: High-fiber biscuits, Nutritional enrichment, Quality evaluation, Soy milk residue.

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