

Development and Compositional Analysis of Functional Bread and Biscuit from Soybean, Peas and Rice Flour

Authors : Jean Paul Hategekimana, Bampire Claudine, Niyonsenga Nadia, Irakoze Josiane

Abstract : Peas, soybeans and rice are crops which are grown in Rwanda and are available in rural and urban local markets and they give contribution in reduction of health problems especially in fighting malnutrition and food insecurity in Rwanda. Several research activities have been conducted on how cereals flour can be mixed with legumes flour for developing baked products which are rich in protein, fiber, minerals as they are found in legumes. However, such activity was not yet well studied in Rwanda. The aim of the present study was to develop bread and biscuit products from peas, soybeans and rice as functional ingredients combined with wheat flour and then analyze the nutritional content and consumer acceptability of new developed products. The malnutrition problem can be reduced by producing bread and biscuits which are rich in protein and are very accessible for every individual. The processing of bread and biscuit were made by taking peas flour, soybeans flour and rice flour mixed with wheat flour and other ingredients then a dough was made followed by baking. For bread, two kind of products were processed, for each product one control and three experimental samples in different three ratios of peas and rice were prepared. These ratios were 95:5, 90:10 and 80:20 for bread from peas and 85:5:10, 80:10:10 and 70:10:20 for bread from peas and rice. For biscuit, two kind of products were also processed, for each product one control sample and three experimental samples in three different ratios were prepared. These ratios are 90:5:5,80:10:10 and 70:10:20 for biscuit from peas and rice and 90:5:5,80:10:10 and 70:10:20 for biscuit from soybean and rice. All samples including the control sample were analyzed for the consumer acceptability (sensory attributes) and nutritional composition. For sensory analysis, bread from of peas and rice flour with wheat flour at ratio 85:5:10 and bread from peas only as functional ingredient with wheat flour at ratio 95:5 and biscuits made from a of soybeans and rice at a ratio 90:5:5 and biscuit made from peas and rice at ratio 90:5:5 were most acceptable compared to control sample and other samples in different ratio. The moisture, protein, fat, fiber and minerals (Sodium and iron.) content were analyzed where bread from peas in all ratios was found to be rich in protein and fiber compare to control sample and biscuit from soybean and rice in all ratios was found to be rich in protein and fiber compare to control sample.

Keywords : bakery products, peas and rice flour, wheat flour, sensory evaluation, proximate composition

Conference Title : ICFSN 2024 : International Conference on Food Science and Nutrition

Conference Location : Ottawa, Canada

Conference Dates : July 11-12, 2024