

SHORT COMMUNICATION

Effects of substituting rice flour as fillers for wheat flour at varying levels in beef sausage production

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ABSTRACT

To derive optimum benefits from agricultural products is to add value to these products. In the meat industry, sausage making is a well know process of adding value to what would otherwise consider low quality meats and wheat flour is a commonly used ingredient. In the present study the effects of substituting wheat flour with rice flour in beef sausage was evaluated. Proportions of rice flour in each of the five batches of beef sausage mixture were as follows: Control (Batch 1; 0% rice); Batch 2 (5% rice); Batch 3 (10% rice); Batch 4 (15% rice); Batch 5 (20% rice). Cooking and refrigerated weight losses, nutrient composition and sensory characteristics of the sausages were determined. Data were subjected to one-way analysis of variance in a completely randomized design. Treatment effect ($P < 0.05$) was observed for percentage cooking weight loss and was lowest (1%) in Batch 5 and highest (2%) in the Control. There was difference ($P < 0.05$) in percentage refrigeration weight loss and was found to be highest (5.8%) in Control and lowest (3.2%) in Batch 4. All parameters of sensory evaluation were significantly ($P < 0.05$) different between batches except for saltiness and overall flavour. Batch 4 was most preferred for colour. Tenderness decreased as the level of rice inclusion increased. Batch 4 had the highest score for overall acceptability when compared with the Control of which panellists were indifferent about its acceptability. Proximate composition of the sausages showed that Batch 5 had the highest crude protein, ash and ether extract of 12.4, 4.2 and 2.4 %, respectively. Therefore, beef sausages can be produced using rice flour as flour replacement at 15% inclusion as this favours the product's resistance to diffusion, thus maintaining storage stability. However 20% inclusion favours enhanced nutrient composition.

Keywords Beef sausage, Fillers, Rice flour, Wheat flour, Value adding