

## **Roasted Pearl Millet Flour (RoPMF) Improved the Mineral Composition of Beef Sausages**

### **ABSTRACT**

Meat products which are cheaper and have better nutritional composition are crucial for reducing hunger and promoting good health and wellbeing of humans. This study investigated the nutritional, physicochemical, sensory, and formulation cost of beef sausages prepared using roasted pearl millet flour (RoPMF). A complete randomized design was used to assign roasted pearl millet flour (0% RoPMF, 5% RoPMF, 10% RoPMF and 15% RoPMF) to meats. Other ingredients were added in equal amounts. The official methods of analysis of the Association of Official Analytical Chemists and British Standard Institute procedures were used for mineral and sensory analysis, respectively. There were significant differences ( $P < 0.05$ ) in the mineral composition of the beef sausages. The iron, magnesium and calcium contents of the RoPMF sausages were generally higher than the control (0% RoPMF) sausages. The potassium contents of 5% RoPMF and 15% RoPMF sausages were similar ( $P > 0.05$ ) to the control. The 5% RoPMF sausages had the highest zinc content of  $35.29 \pm 0.18$  mg/kg. There were no significant differences ( $P > 0.05$ ) in the sensory (color, flavor intensity, flavor liking, texture, tenderness, juiciness) scores and overall acceptability of the beef sausages. The ash, fat, carbohydrate, water holding capacity, and peroxide value of the beef sausages were not affected ( $P > 0.05$ ) when RoPMF was used for the formulation. In general, the protein content of the RoPMF beef sausages was not affected negatively. The cost of producing a kilogram of beef sausages was GHS 31.50 (\$5.47), GHS 31.10 (\$5.40), GHS 30.70 (\$5.33), and GHS 30.30 (\$5.26) for 0% RoPMF, 5% RoPMF, 10% RoPMF, and 15% RoPMF beef sausages, respectively. It is concluded that the formulation of beef sausages with roasted pearl millet flour did not negatively affect the sensory characteristics of the sausages, but improved its mineral composition and reduced production cost.