The roles of banana peel powders to alter technological functionality, sensory and nutritional quality of chicken sausage

ABSTRACT

Chicken sausages included with three different quantities of banana (Musa balbisiana) peel powder. The technological properties (cooking yield, texture, water-holding capacity, color, rheology, and texture), composition, and sensory acceptability were assessed. In storage study, lipid oxidation of the best formulation from the sensory score was evaluated. The inclusion of banana peel powder (BPP) raises the nutritional value with regard to an increase in dietary fiber and a reduction in the sausage fat content. The addition of BPP also causes a significant increase in the cooking yield and water-holding capacity. Additionally, storage modulus values increase with the increase in the BPP's concentration. However, with BPP incorporation, a hard texture and darkening of the sausage were observed. Interestingly, our findings exhibit the compromise in microstructural of chicken sausage with high percentage of BPP manifested by the high storage modulus and hardness but with low resistance toward stress, short linear viscoelastic region. This aspect also caused a significant change in the sensory score. The TBA value in the sausage containing 2% BPP exhibited a delay in lipid oxidation up to 55%, prompting its antioxidant potential. Generally, the incorporation of BPP to chicken sausage changes its properties. BPP has been a potential candidate as a value-adding ingredient that may be used during meat preparation since it positively influences the nutritional value and specific technological properties of the food.