Development of Gluten-Free Steamed Cake Using Green Saba Banana Flour

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Abstract: Along with the increase of diagnosed Celiac patient, gluten-free (GF) foods have shown a significant increase in worldwide consumption. The removal of gluten and replacement with other ingredients to improve the palatability have caused unsatisfactory nutritional profile in GF foods. Green banana flour is known to content high resistant starch (RS) that is beneficial for human health. Saba banana is a locally grown banana, though widely available, but it has limited industrial applications. To add-value to Saba banana and addressing the issue of low nutritional quality of GF food, a steamed cake was developed using green Saba banana flour (GSBF), soy protein isolate (SPI) (0%, 10% and 15%) and a commercial cake stabilizer, Ovelette (0%, 3.5% and 7%). Characterisation of the flour (colour, oil holding capacity, water holding capacity, proximate content and resistant starch content) and cake batters (viscosity and specific gravity) were carried out. The specific volume, weight loss, colour, texture and sensory acceptance of the cake were investigated. GSBF was found to contain high RS and dietary fibre but darker in colour. Depending on the concentration, SPI and stabilizer increased the batter viscosity and affected the specific volume and colour of the cakes. The texture properties were generally improved with the additives used. The most acceptable formulation was identified from sensory evaluation; it contained higher protein, dietary fibre and RS than its gluten-containing counterpart. Results obtained show that appropriate amount of SPI and Ovelette could effectively improve the physical, textural and nutritional properties of the cake.

Keywords: gluten-free, green banana flour, resistant starch, steamed cake, soy protein isolate