Impact of bamboo shoot powders on the quality attributes of cassava-based crackers

ABSTRACT

Bamboo shoots are a nutritious food rich in protein and dietary fibre, low in carbohydrates and fats, and with good mineral and vitamin profiles. Bamboo shoots are projected to be a superfood, although at present they are considered a neglected food commodity that is restricted to a few Asian countries. The use of bamboo shoot powder (BSP) in food fortification represents a promising avenue for enhancing the nutritional value of foods. This study evaluated the differences in nutrient composition and functional properties of two BSP species (Gigantochloa levis and Bambusa vulgaris), and their effects on the proximate analysis, physicochemical properties and sensory attributes of cassava crackers. G. levis BSP had greater amounts of moisture, protein, fat, ash, and total dietary fibre than B. vulgaris BSP. Both types of BSP had good WHC and swelling power which suggest that they could easily be incorporated into food systems. B. vulgaris BSP had better WHC and swelling power than G. levis BSP. The cassava crackers were formulated as C control (0 % BSP), B5 (5 % B. vulgaris), B10 (10 % B. vulgaris), G5 (5 % G. levis), and G10 (10 % G. levis). Adding BSP significantly increased ($p<0.05$) the moisture, protein, ash, crude fibre and total dietary fibre of the crackers. G. levis BSP had a stronger influence on the colour ($p<0.05$) of cassava crackers. The overall liking score of cassava crackers containing 5 % G. levis BSP was the highest ($p<0.05$). In conclusion, BSP enhanced the nutritional properties while improving the sensory characteristics of cassava crackers. BSP is potentially useful as a functional ingredient in cassava crackers and snack products.