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Changes in nutrient and phytochemical content after precooking processing in the shoots of two Bambusa species

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Bamboo shoot, the juvenile culm of bamboo plant is popular worldwide as a seasonal vegetable due to its high nutritional value and health benefits. Prior to cooking, shoots are processed which can improve nutrients digestibility, bioavailability and also reduce anti-nutritional factors. In present study, juvenile shoots of *Bambusa balcooa* and *B. nutans* were subjected to precooking processing treatments for different time durations such as boiling (10 and 20 min) and soaking (12 and 24 hours) and were analyzed for nutrients and phytochemicals content. Results showed that raw shoots contain nutrients such as protein (3.5-3.7%), carbohydrate (2.80-3.22%), starch (1.21-1.40%), amino acid (2.13-2.20%), dietary fiber (5.34-6.07%), vitamin C (1.52-2.63 mg/100 g fresh weight) and vitamin E (0.47-0.49 mg/100 g fresh weight), ash (0.82-0.86%) and moisture (90.68-91.21%) content. With processing, it was observed that protein, carbohydrate, free amino acid, dietary fibre and ash content reduced maximum up to 77% (20 min boiling), 78% (24 hours soaking), 56% (20 min boiling), 61% (24 hours soaking) and 57% (24 hours soaking) respectively. Whereas, starch increased (33%) after boiling and decreased (24%) after soaking. Besides nutrients, shoots also contain phenol and phytosterols which have antioxidant, anti-inflammatory, anti-allergic, antimicrobial, cardio-protective and vasodilating properties. Total phenol content in raw shoots was 362.36 mg/100 g fresh weight in *B. balcooa* and 559.21 mg/100 g in *B. nutans* which reduced up to 60% with boiling. Phytosterol content was higher in *B. balcooa* (127.24 mg/100 g dry weight) than *B. nutans* (91.14 mg/100 g dry weight), which increased with processing up to 56%. Results revealed that boiling treatment was more efficient in retaining nutrients and phytochemicals in the shoots.

Biography

Kanchan Rawat is a Research Scholar at Department of Botany of Panjab University, India. She was the recipient of UGC Fellowship.

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