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Young bamboo culm: potential food as source of fiber and starch

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ABSTRACT

With the objective of widening the use of bamboo in the food industry, the present work aimed to produce and characterize the young bamboo culm flours from varieties *Dendrocalamus asper*, *Bambusa tuldooides* and *Bambusa vulgaris* as potential sources of fiber and starch. The young culms were collected, cut in three sections (bottom, middle, top), processed into flour, and they were physically, chemically and technologically analyzed. The data were obtained in triplicate and evaluated by means of average differences, using analysis of variance (ANOVA) and Scott-Knott test ($p < 0.05$). The young bamboo culms flours presented low values for moisture content (< 10 g/100g), protein, lipids and ash contents (< 3 g/100g). Regarding the carbohydrates profile, the flours were significantly different in their sugar, starch and total fiber contents. All flour samples presented a potential for fiber extraction (> 60 g/100 g), and the varieties *B. vulgaris* and *D. asper*, presented an additional potential for starch extraction (16 and 10 g/100 g, respectively). Regarding technological characteristics, all flours presented bright yellow color, lightly acidic pH (> 5.0), water solubility index (WSI) lower to 2.5%, excepting *D. asper*, which presented a WSI superior to 7.5%. In this way, the evaluated young bamboo culms present potential application in the food industry as flours and as source of fibers; in addition, the varieties *D. asper* and *B. vulgaris* can also be used for starch extraction.

Keywords: Bamboo, young culm, healthiness, sustainability.

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