

Antioxidant Properties of Chips made from Banana Pseudo-stem

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This study evaluated the antioxidant properties namely total phenolic content (TPC), total flavonoid content (TFC), antioxidant capacity, and DPPH radical scavenging activity of chips made from banana pseudo-stem. The banana pseudo-stem paste was prepared as follows; banana pseudo-stems were cleaned by removing sheaths and other unwanted materials, cut into small pieces, boiled at 80 °C and ground to a paste using a grinder. For chip preparation, the dough was formulated by partially replacing wheat flour with boiled banana pseudo-stem paste at a ratio of 100:0, 80:20, 70:30, 60:40, and 50:50, where the dough was prepared with 100% wheat flour was considered the control. The uniformly cut dough was fried at 180 °C for 10 to 15 minutes with coconut oil. The ratio of wheat flour and banana pseudo-stem paste 70:30 was selected as the best formulation after sensory evaluation. The best formulation and the control samples were extracted in ethanol (70%) and the extract was used for the analysis of antioxidant properties with 3 replicates. The best-formulated chips had higher TPC (0.60±0.032 mg gallic acid equivalent/g dry matter), and TFC (1.12±0.08 mg catechin equivalent/g dry matter) compared to the control (0.49±0.001 mg gallic acid equivalent/g dry matter, 1.02±0.032 mg catechin equivalent/g dry matter of TPC and TFC, respectively), whereas antioxidant capacity was high in the control (2.23±0.018 mg ascorbic acid equivalent/g dry matter) when compared to the best-formulated chips (2.05±0.10 mg ascorbic acid equivalent/g dry matter). Higher DPPH radical scavenging activity (IC₅₀ 0.3±0.004 mg/mL) was observed for ethanol extract of the best-formulated chip than that in the control (IC₅₀ 0.38±0.006 mg/mL). Based on the findings, it could be concluded that banana pseudo-stem can be used to prepare antioxidant-rich healthy snacks by partially substituting wheat flour.

Keywords: Antioxidants and antioxidant activity, banana pseudo-stem, chips

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