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Bioactive Compounds in Velvet Bean Seeds: a Promising High Quality Legume to Attain Food Security in Developing Countries

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Abstract

BIOACTIVE COMPOUNDS IN VELVET BEAN SEEDS: A PROMISING HIGH QUALITY LEGUME TO ATTAIN FOOD SECURITY IN DEVELOPING COUNTRIES

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Abstract

In the present study, effect of certain indigenous processing methods on the levels of bioactive compounds of an under-utilised legume, velvet bean (*Mucuna pruriens*) was investigated. Ten different accessions of velvet bean seeds collected from various agro-ecological locations of the world exhibited a wide variability with respect to the levels of total free phenolics (5.24 — 8.65 g/100 g DM), tannins (1.77 — 3.49 g /100 g DM), L-Dopa (4.30 — 6.23 g/100 g DM) and phytic acid (1.17 — 2.37 g/100 g DM). Among the different processing methods attempted in the present study, soaking in tamarind solution + cooking and soaking in alkaline solution + cooking treatments were found to reduce significant level of total free phenolics by 24 — 46 % and 36 — 65 %, respectively. Tannins were reduced at maximum level only under soaking in alkaline solution + cooking treatment (24 — 52 %). Significant level of loss of L-Dopa (6 — 67 %) was noticed under all the treatments of the present study. However, none of the treatments resulted in significant level of loss of phytic acid in velvet bean seeds. Further, sprouting + cooking as well as open-pan roasting were found to be optimal in retaining higher levels of bioactive compounds. Hence, such viable processing methods could be recommended for the consumption of velvet bean seeds as a natural source of health beneficial bioactive compounds, in addition to high nutritive potential.

Keywords: tannins, bioactive compounds, L-Dopa, *Mucuna pruriens*, phytic acid, processing methods, total free phenolics, velvet bean