Biochemical and Mineral Quality Analysis of Shea (Vitellaria Paradoxa) Latex

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Abstract

The research investigated the biochemical and mineral composition of shea latex. Shea latex samples were tapped monthly, from May to October 2014 at Yagaba and Nyankpala in the Northern Guinea-savannah and Kawampein the Transitional agro-ecological zones of Ghana for the investigation. The biochemical components entailed proximate and phytochemical quality determinations. The mean monthly proximate content of the shea latex did not differ significantly for crude fat, moisture, ash and carbohydrates. However, crude protein and crude fiber levels were significantly higher in July (1.33% and 8.86%) respectively and in August (1.29% and 8.80%) for crude protein and crude fiber respectively. Based on location, crude protein level of shea latex was significantly higher in Yagaba (1.22%) than Nyankpala (1.11%) respectively. Consistently crude protein levels in the shea latex were relatively low and manifested significant variations with respect to tapping period and location. Kawampe and Nyankpala had significantly highest levels of K (39.53 mg/l and 40.66 mg/l respectively) and significantly higher levels of Zn (0.02 mg/l and 0.02 mg/l) respectively than Yagaba (0.01 mg/l). Shea latex sodium (Na):potassium (K) ratio of less than one (1) across the study period was also revealed. The phytochemical quality screening of different polar solvents extracts of the shea latex revealed the presence of alkaloids, terpenoids, reducing sugars and tannins. The outcome of this study suggests that shea latex may have medicinal and nutritional benefits, and the potential for the manufacture of hypo-allergenic latex products.

Keywords: Proximate analysis, Phytochemicals, Minerals, Shea Latex, Vitellaria paradoxa.