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Quality of Baobab Products Across their Value Chain in Malawi

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Abstract

The baobab (*Adansonia digitata* L.) is an important indigenous fruit tree in sub-Saharan Africa. In Malawi the fruit is heavily commercialised, with a wide range of products available in informal and formal markets. Commercialisation has substantially intensified in the last decades, yet little information is available on the quality of baobab products on the market, as well as how quality might differentiate depending on the setup of the supply chain. In particular, it is unclear how handling of baobab may affect the high Vitamin C levels baobab is known for and whether microbiological contamination occurs. Therefore, this study aimed at characterising the baobab value chain in Malawi, determine important quality characteristics of baobab products at different stages of the supply chain as well as how supply chain configuration may affect product quality. To achieve this, a mixed methods approach was pursued, using semi-structured interviews with different members of the value chain (67 respondents in total), concurrent collection of baobab samples (fruit, pulp-on-seed, powder, 79 samples in total) and subsequent laboratory analysis (Vitamin C and mycotoxins). The main actors of baobab value chain in Malawi were identified as collectors, rural, semi-urban and urban traders, informal processors producing baobab ice lollies and juice, formal juice processors, as well as retailers. Preliminary results indicate that dryness and colour of fruit pulp are typically considered the most important quality indicators across different supply chain configurations; while other factors such as colour of or cracks in the baobab shell are more heavily disputed. Vitamin C levels in the samples varied greatly, with mean levels ranging from 127.7 ± 45.1 mg/100 g for fruit, 121.5 ± 44.9 mg/100 g for pulp-on-seed, to 68.7 ± 56.0 mg/100 g in powder samples. Mycotoxins were detected in one fruit and one pulp-on-seed sample (3.2 and 9.1 g per kg, respectively). The results indicate that it is advisable to store baobab in the fruit and only process into powder as late as possible. Since mycotoxins can be present in baobab products and children are the dominant consumer group in Malawi, more awareness with regard to handling and processing baobab is required.

Keywords: Baobab, indigenous fruit tree, Malawi, mycotoxins, quality, vitamin C