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## Diversity and Nutritional Characteristics of *Garcinia kola* Heckel (Clusiaceae) in Southwest Cameroon

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### Abstract

*Garcinia kola* (Clusiaceae) is a fruit tree species indigenous to West and Central Africa. The tree is frequently called ‘wonder plant’ because all its parts have medicinal properties. In Cameroon, seeds of *G. kola* are widely used by locals for treatment of gastric problems. Studies on *G. kola* have mostly focused on its bioactive substances. However, information on intraspecific diversity and the exact nutritional values of the seeds remain unclear. Therefore, the objective of this study was to assess and describe morphological diversity and nutritional status among different populations of *G. kola* from the Southwest region of Cameroon. For examination of the species’ current management and utilisation practices, we visited 50 farms and interviewed 48 farmers. Further, morphological characteristics of 759 fruits, 1,821 seeds and 402 leaves coming from 81 individual trees were examined and botanical descriptors were developed based on the species morpho-types. Seeds of each tree were subjected to nutritional analyses for: ash, moisture, crude fat, fibre, protein and NFE (nitrogen-free extract) content. The nutritional values were determined as follows: ash 0.33%, moisture: 11.4%, crude fat: 1.48%, crude fibre: 2.27%, crude protein: 6.48% and NFE: 78.02%. We did not find any significant differences between our study sites; however, results suggest that morphological diversity within a single population is much higher than the diversity among populations from different sample sites. The process of *G. kola* domestication seems to be at its very beginning, although we identified some efforts in terms of species-targeted cultivation and selection. It is expected that this study may provide the basics for the first steps of *G. kola* domestication. In future, research on the species population genetics as well as its secondary metabolites content should be conducted to complement our data and further promote the domestication process.

**Keywords:** Bitter kola, Central Africa, domestication, indigenous fruit trees, phytochemistry