Tropentag, September 20-22, 2023, hybrid conference

"Competing pathways for equitable food systems transformation: Trade-offs and synergies"

Ethnobotanical study on the utilisation of wild edible indigenous fruits in Miombo woodland of Tabora region western Tanzania

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Abstract

The wild edible indigenous fruits species play a significant role in the daily life of rural people living in developing countries. They are anticipated to have potentially nutrients, vitamins, minerals and fiber. However, the dynamics in land use, climate change and alteration of rural ecosystems and landscapes values on conserving biodiversity, some indigenous fruits have disappeared and others may be at risk of extinction. The objectives of this project were to document the knowledge on the diversity of wild edible indigenous fruits, the extent of utilisation and degradation threats in Western Tanzania. This research was based on extensive field surveys, land use and cover mapping using geospatial techniques, edible fruits collection, minerals, vitamins and proximate analysis of five consumed species of edible fruits, and interviews with the local people. The present study documented 51 wild edible indigenous fruits species, the most abundant are *Vitex mombassae* 14.4 %, *Strychnos cocculoides* 14.1 %, *Vitex doniana* 12.2 %, *Phyllanthus engleri* 8.5 %, *Friesodielsia obovata* 8.6 %, *Tamarindus indica* 6.5 %, *Parinari curatellifolia* 5.3 %, *Grewia conocarpa* 4.6 % and the remaining species 0.2 % - 4.0 % are rare. Of the species identified, (34.5 %) are available after rainy season (April, May and June), (31.1 %) during dry season (July, August and September), (26.1 %) before rainy season (October, November) and only (8.3 %) are available year-round. The wild edible indigenous fruits have multiple uses as food (68.3 %), medicine (19.7 %), and (12.0 %) are preferred as vitamin supplement. The result showed mineral elements potassium, magnesium and calcium were present in substantial amounts in most fruits ranging from 487 to 1650.2 mg/100g. *Vitex doniana, Strychnos cocculoides*, and *Parinari curatellifolia* had the highest content of five mineral element (i.e. Fe, Ca, Na, Mg, K). The fruits *Phyllanthus engleri, Grewia conocarpa, Strychnos cocculoides, Vitex doniana*, and *Parinari curatellifolia* showed the presence of vitamin B9, A, and C. The diseases cured using indigenous fruits in the study areas are stomach problems, cough respiratory infection, reproductive problems, urinary infection and blood pressure. Besides that, the indigenous fruits on miombo forest of western Tanzania are threatened by increasing human activities 52.2 % and environmental and climate change 47.8 %. Overall, the study showed that the fruits have substantial nutrients, minerals, essential vitamins and fiber required to maintain health of rural communities, therefore, these fruits require commercial markets in order to add value, and a holistic approach in the conservation of indigenous species with edible fruits in the forest and rangelands is needed. By doing that, the United Nations Sustainable Development Goals (12, 15) set by 2030 and 2063 African Development Agenda can be achieved.

Keywords: Nutritional benefits, use of edible fruits, value addition and conservation

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