



Promoting local knowledge on *Tacca leontopetaloides* (L.) Kuntze, a neglected and underutilized wild food plant for enhancing food security

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Research

Abstract

Background: *Tacca leontopetaloides* is a wild food geophyte used by local communities as famine food, with significant contribution to people subsistence during food crisis events. Local ecological knowledge and use of the species are poorly documented leading to knowledge loss and underutilization of the species. This study explored local knowledge on the species, including ecology, traditional processing technique, use level, barriers to its valuation, and domestication perspective.

Methods: A stratified sampling design based on climatic zones and people ethnicity was adopted for ethnobotanical investigations. Semi-structured interviews were conducted from October to December 2022, with 224 local people from five ethnic groups residing in two contrasting climate zones in Burkina Faso. The main information collected included people’s socio-cultural traits, use knowledge and ecology of the species, barriers to the species domestication, traditional processes for starch flour extraction from tubers, and people’s willingness to domesticate the species.

Results: The results showed that 93.96% of the informants know the species botanically, but only 35.27% use it in practice as a food species. Practical use was significantly influenced by climate zone ($p < 0.0001$) and people’s ethnicity ($p = 0.003737$). Six habitats were cited as suitable for the species occurrence, with under tree canopy (37.02%) as the main one. Ecological knowledge was also significantly affected by people’s ethnicity ($X^2 = 37.22$; $p = 0.00021$) and climate zone ($X^2 = 88.66$; $p < 0.0001$). Ignorance of the species’ edibility (48.19%) and limited practical skills on tuber processing technique (28.31%) were listed as the main barriers to the species valuation. Only 16.52% of the informants have practical skills in tuber processing (starch extraction). For the species domestication, 80.83% of the informants testified their willingness to domesticate *T. leontopetaloides*.

Conclusions: Our findings will help for securing the long-term use of *T. leontopetaloides* and enhance food security. To this end, we recommended a large-scale awareness and people training on tuber processing techniques.

Keywords: Domestication; Local ecological knowledge; Barriers; Food security; Ethnicity

Background

In West Africa, wild food plants (WFPs) play a vital role in food supply during vulnerability contexts such as crop losses due to climate change (Pouliot 2012). Indeed, WFPs have the potential to fulfill the dietary needs and ensure balanced nutrition for humans, if consumed in recommended portions and sizes (Mishra *et al.* 2021). *Tacca leontopetaloides* (L.) Kuntze is listed among the key wild food species supporting people's subsistence during food crisis events (Haln *et al.* 2019). Its tubers are exploited by local people as famine food or a staple food source in many tropical and equatorial regions (Bevacqua 1994; Bruschi *et al.* 2014). For instance, starch flour extracted from the tubers of the species is traditionally used by people from coastal areas of West Java as a substitute for rice (Wardah *et al.* 2017). Besides their use as food, tubers of *T. leontopetaloides* are also used to treat stomach ache and therefore, could represent functional foods or pharma-foods, able to provide health benefits, including the prevention and cure of disease (Bruschi *et al.* 2014). Like other WFPs, tubers of the species are also harvested and sold, especially by vulnerable communities (such as migrants and the unemployed) to generate income, thereby contributing to poverty alleviation (Petersen *et al.* 2012, Shackleton *et al.* 2010).

As a potential foodstuff to be promoted in the context of increasing food demand due to rapid population growth, *T. leontopetaloides* has been the subject of scientific investigations, particularly into its uses, nutritional value, and associated food processing. Food and medicine are the main uses reported in previous studies (Haln *et al.* 2018), and the nutritional value of the tubers of the species relies on their high content in carbohydrates, which ranged from 90-95% (Ndouyang *et al.* 2009, Ukpabi *et al.* 2009). Starch of the tubers can be used as a raw material in the manufacture of industrial foods such as noodles and cakes (Wardah *et al.* 2017).

Despite its high nutritional value, *T. leontopetaloides* is globally known as a neglected and under-utilized species and is still being used in the wild in most of its distribution areas (Ndouyang *et al.* 2009). Knowledge gaps on the biology and ecology of WFPs, as well as the general lack of storage and processing technology, limit their promotion and integration into food production and consumption patterns (FAO 2019, Heywood 1999, Ulian *et al.* 2020). Local knowledge held by local communities using *T. leontopetaloides* as a food plant, particularly in terms of processing technologies and harvesting, are poorly documented and disseminated, limiting its valuation and contribution to food security. Indeed, traditional knowledge on the use of native resources is verbally transferred between generations, making them vulnerable in changing environmental and social contexts (Nadembega *et al.* 2011, Saussey *et al.* 2008). Therefore, there is an urgent need to record and document local knowledge on *T. leontopetaloides* to ensure this knowledge preservation and promote the large-scale use of the species in a context of increasing food demand. This promotion is essential for food resource diversification, which improves food security and people's resilience (Nahar *et al.* 2024, Waha *et al.* 2018), with positive impact on the species domestication. Moreover, socio-cultural barriers to the species use and domestication are also poorly investigated.

The objectives of this study were to: (i) document local knowledge on *T. leontopetaloides*, including its ecology and traditional processing technologies; (ii) assess the species use level according to the species distribution zones and people's socio-cultural traits; (iii) identify barriers to the species use and valuation, and (iv) assess the willingness of people to domesticate the species. Three research questions were addressed:

- Do local people clearly know the barriers related to the domestication of the species?
- Is the level of knowledge and use of the species associated with specific people's socio-cultural traits?
- Do local people have the willingness to domesticate the species?

Materials and Methods

Sampling design and study sites

A stratified sampling design based on climatic zones and social-cultural traits of people was adopted to analyze indigenous and local communities' knowledge on *T. leontopetaloides*. Climate conditions are significant factors affecting the occurrence and abundance of plant species as well as resource availability for people, and therefore, could probably influence people's knowledge, perception, and preferences in species use. Socio-cultural traits (ethnicity and gender) are also important factors affecting local forest resources management and uses, including preferences and valorization (Agúndez *et al.* 2020). The

study was conducted in Burkina Faso along a climate gradient covering the main climate zones located within the species distribution area in the country. Two study sites were selected per climate zone to account for variation in social-cultural activities among communities (Fig. 1). In the Sudano-Sahelian zone, the study sites included the localities of Douroula and Safané, with main ethnic groups represented by Bwaba, Dafing, Mossi, and San. Annual rainfall in the zone varies from 700 mm to 900 mm, with a rainy season covering four to five months (Dipama 2010). In the Sudanian zone, selected sites were the localities of Boni and Dindérésso, where Bobo, Bwaba, Mossi, and Dafing are the main ethnic groups. The Sudanian zone is the most humid area of the country, with annual rainfall ranging from 900 to 1,100 mm for a rainy season covering around five to six months (Dipama 2010). Smallholder farming is the main activity across all the study sites.

At each study site, individual semi-structured interviews were conducted among the three main ethnic groups (Ouédraogo *et al.* 2013). Before surveys, meetings were conducted with the local authorities of each site to explain the objectives of the study and receive their approval (Bougma *et al.* 2025). A pre-questionnaire was field-tested with a sample of 10 participants to improve its quality and assess its practical implementation. Following this test, a final questionnaire was drawn up for the whole study. During surveys, informants were randomly selected within each ethnic group and the main information collected included (i) socio-cultural traits of informants (ethnicity, gender, age, profession etc.), (ii) use knowledge of the species (theoretical or practical), (iii) ecology of the species (suitable habitats), (iv) barriers to the species domestication at both social and ecological level; (v) traditional process of flour extraction from tubers and (vi) willingness to domesticate the species. At the beginning of the interviews, informants were informed that their participation was voluntary and that all information provided would be treated anonymously and confidentially. Then, the benefits of the study for food security and the sustainable management of the species were also explained, and the interview proceeded when the informant agreed to participate (Arini *et al.* 2025). In total, 224 informants were interviewed from October to December 2022, with at least 19 per ethnic group within each climate zone (Table 1).

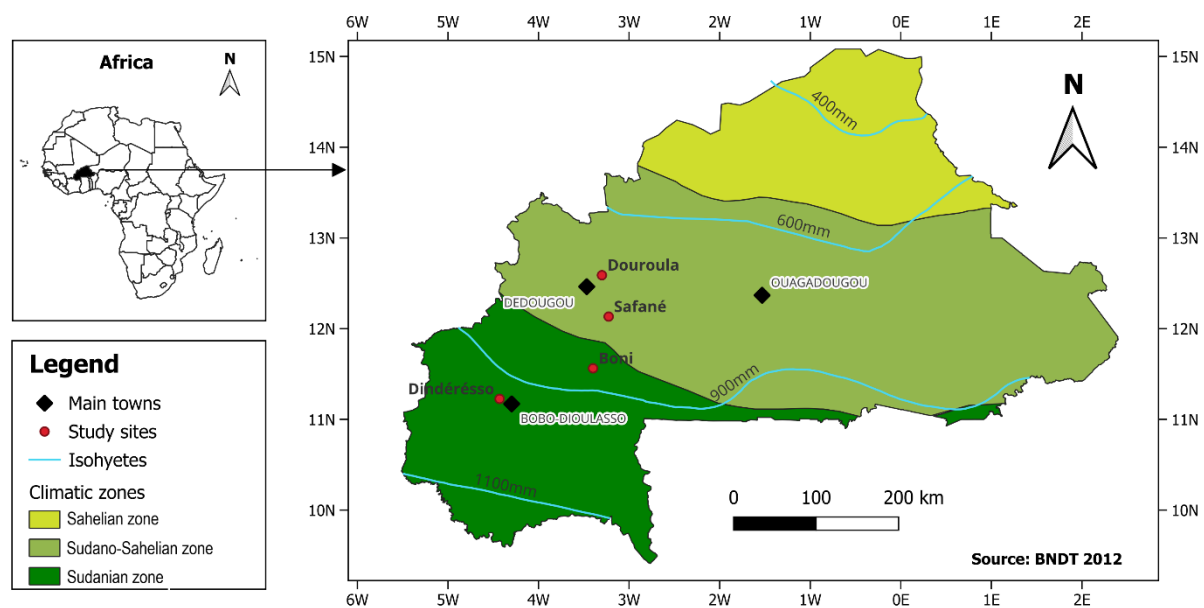


Figure 1. Map of the study sites along climate gradient

Table 1. Distribution of informants across climate zones and ethnic groups

Climate zones	Ethnic groups	Number of informants
Sudano-Sahelian zone		108
	Bwaba	28
	Dafing	28
	Mossi	28
	San	24
Sudanian zone		116
	Bobo	43
	Bwaba	32
	Dafing	19
	Mossi	22
Total		224

Data Analysis

The level of knowledge (LK) of the species in botanical respects and use knowledge (theoretical or practical use as food species) were calculated using equation 1. Generalized Linear Models (GLMs) with binomial error distribution (link = logit) were performed to test the influence of explanatory variables (climate zone, ethnicity, gender, and age category) on people's knowledge of *T. leontopetaloides*. In this study, gender referred to the informant sex, which is man or woman in accordance with the social-cultural context of the study sites. Three age categories were defined: people with age ≤ 30 years, $30 < \text{age} < 60$ years, and people with age ≥ 60 years. Informant responses were coded as follows: botany knowledge (0= do not know the species and 1= know the species) and use knowledge (0= theoretical and 1 = practical). The same model was performed on people's willingness to domesticate *T. leontopetaloides* (0 = no willingness, 1 = yes). Frequencies of citations of the species' habitats and barriers to its domestication were calculated. Then, Chi-square tests were performed to test the level of significance of these frequencies according to climate zone, ethnic group, gender, and age category. Chord diagrams were generated to visualize the relationship between people's knowledge of the species habitats and explanatory variables on the one hand, and between barriers to the species domestication and explanatory variables on the other. The tuber use forms, and the traditional processing techniques of tubers (boiling methods, and the starch flour extraction process) were also described. All statistical analyses were performed using R software version 4.3.1.

$$\text{LK} = [\text{Specific citations} / \text{Total number of citations}] \times 100 \quad \text{Equation (1)}$$

Where Specific citations = Number of citations in botanical knowledge, Number of citations in practical use, Number of citations in theoretical use

Results and Discussion

Species level of knowledge and associated factors

Results showed that 93.96% of informants have botanical knowledge of the species irrespective of their location and social-cultural traits, indicating that the species is well known in its distribution area. For the species use, only 35.27% of the informants use its tubers in practice as food, while 64.73% of them know it theoretically as a food species. Two forms of tuber use were observed among those using them in practice: raw tuber consumption after boiling and tuber processing into starch flour, with 15.27% and 84.73% of citations, respectively. Boiled tubers are eaten directly, while the starch flour is used to make sauces, cakes, and food paste.

Climate zone and ethnicity were found to be significant factors influencing people's practical knowledge of the species (Table 2). The practical use of the species was higher in the Sudano-Sahelian zone (28.57%) than in the Sudanian zone (6.70%). It is stated that plant gathering and knowledge are closely tied to local ecological conditions, so that areas with higher plant biodiversity offer greater opportunities for local communities to use a wider variety of wild food plants (Alrhoun *et al.* 2025, Khakurel *et al.* 2021, Traoré *et al.* 2011). In Burkina Faso, although plant diversity is higher in the Sudanian zone compared to the Sudano-Sahelian zone (Schmidt *et al.* 2005; Zerbo *et al.* 2016), the use of *T. leontopetaloides* as food is highest in the Sudano-Sahelian zone. This could be due to the agricultural productivity experienced by local communities within climate zones. In fact, the agricultural sector in West Africa is vulnerable to climate change because of its high reliance on rain-fed (Sultan & Gaetani 2016), with pronounced effects in dry areas as the Sudano-Sahelian zone. This vulnerability leads to low crop yields and crop losses, which probably increase the use of wild food plants to supplement food needs.

Regarding ethnicity, the highest (and similar) practical use was recorded among Dafing (14.73%) and Bwaba (14.28%) ethnic groups, and the lowest in the Bobo ethnic group (0%). These results indicate that the food use of *T. leontopetaloides* depends on the cultural considerations of people. Similar findings were observed by Termote *et al.* (2011), who found that utilization of wild food plants was culturally highly diverse between ethnic groups in the Tshopo district of DR Congo. Indeed, people's knowledge generally overlaps with their preferences for plant uses, which are determined by ethnic differences (Ouédraogo *et al.* 2013). Nevertheless, some studies showed that ethnic groups may share similar knowledge on food species due to social and cultural interactions between communities (Avocéyou-Ayisso *et al.* 2012, Prakofjewa *et al.* 2023, Zerbo *et al.* 2022), suggesting that differences may vary on a case-by-case basis depending on target species and culture of communities.

Table 2: GLM results showing the influence of people's location and socio-cultural traits on their practical knowledge of *T. leontopetaloides*

Factors	Estimate	Std. Error	z value	Pr(> z)
(Intercept)	-4.0859	1.0343	-3.950	7.80e-05***
Climate zone	2.5224	0.3673	6.867	6.53e-12***
Ethnicity	-0.4091	0.1238	-3.303	0.000955***
Sex	-0.1859	0.3337	-0.557	0.577434 ^{ns}
Age	0.4199	0.2654	1.582	0.113649 ^{ns}

ns : non-significant, *: p < 0.05, **: p < 0.01, ***: p < 0.001

People's knowledge of the species ecology

Six habitats related to vegetation, soil, and topography conditions were cited by informants as suitable habitats for the species (Fig. 2). These habitats were also found to host the species in different tropical and sub-tropical areas (Caddick *et al.* 2002, Ogbonna *et al.* 2017). Under tree canopy was cited as the most suitable habitat for the species (37,02%). Some previous studies (Spennemann 1994, Wardah *et al.* 2017) reported that *T. leontopetaloides* grows well under the canopy of many tree species, making it a promising food species in agroforestry. Although *T. leontopetaloides* occurrence is frequently associated with vegetation or tree shade, the species also grows in solitary forms on open lands (Ogbonna *et al.* 2017).

People's knowledge of the species ecology was significantly influenced by their ethnicity ($X^2 = 72.372$, $p < 0.0001$) and their location represented by climate zone ($X^2 = 86.384$, $p < 2.2e-16$). In contrast, people's age ($X^2 = 4.1255$, $p = 0.5315$) and sex ($X^2 = 9.4749$, $p = 0.4877$) have no significant influence on their knowledge. The relationship between people's socio-cultural traits and knowledge of *T. leontopetaloides* ecology is illustrated in Fig. 3. Results on people's knowledge on *T. leontopetaloides* ecology are mostly related to the practical use of the species by communities. This could be explained by the fact that the more the species is practically used in a community, the more that community has accumulated knowledge about the species' ecology. Indeed, people who use the species for food supply will naturally pay attention to the habitats where it grows to better guide their harvesting activities. The difference observed between climate zones lies in the specific ecological conditions. Biodiversity and ecosystems are more diverse in the Sudanian zone than in the Sudano-Sahelian zone (Fontes & Guinko 1995), providing a diversity of habitats for *T. leontopetaloides*. For instance, forests, hills, and lowlands were only cited by people from the Sudanian zone as natural habitats of the species.

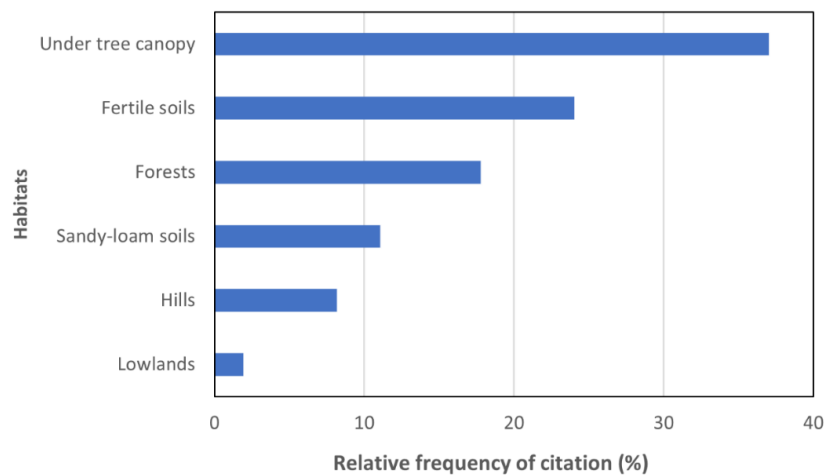


Figure 2. Importance of suitable habitats for *T. leontopetaloides* according to people knowledge

Social and ecological barriers to *T. leontopetaloides* valuation

Informants cited seven barriers limiting the species valuation (Fig. 4), with people ignorance of the species edibility (ISE) and limited knowledge on tuber processing technology (LKP) as the main barriers, recording 48.19% and 28.13% of the citations, respectively. These main barriers contribute to the underutilization of the species and may be explained by the fact that nowadays, traditional knowledge transferring and circulation among people are compromised by environmental and social transitions marked by modernization, erosion of biocultural diversity, and changing dietary habits (Prakofjewa *et al.* 2023, Ouédraogo *et al.* 2013).

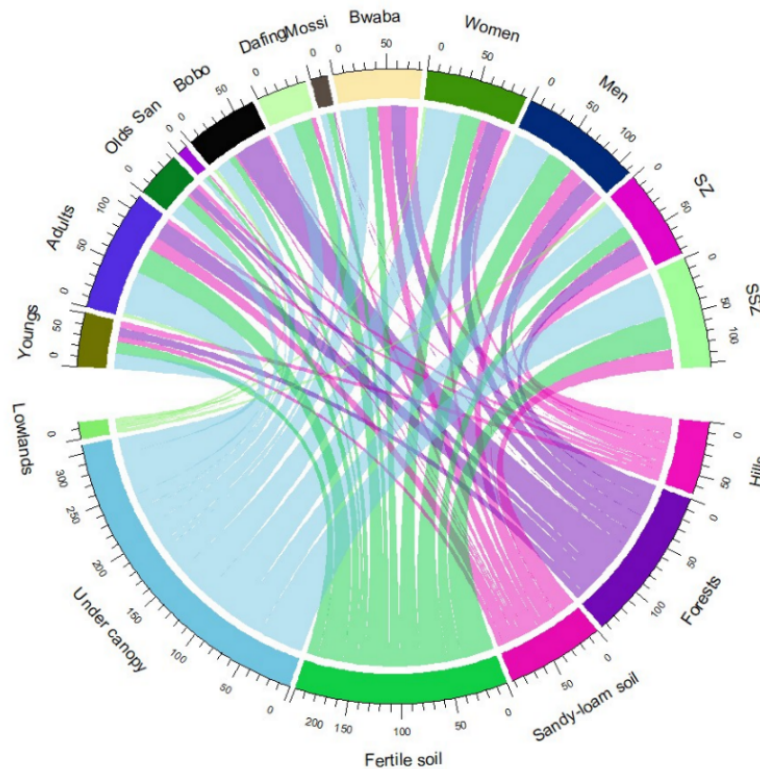


Figure 3. Variability in people knowledge on *T. leontopetaloides* habitats across their social-cultural traits and locations (Note: SZ: Sudanian Zone, SSZ: Sudano-Sahelian Zone)

Only 16,52% of the informants had practical knowledge of tuber processing technique. A similar trend was found with native oil plants in the Western part of Burkina Faso, where the traditional oil extraction technique is held by a few people, representing 23% of surveyed communities (Tiétiambou *et al.* 2016). However, for some well-known food species with high socio-economic value, such as *Vitellaria paradoxa* C.F.Gaertn., traditional knowledge are widespread, and their transfer often takes place within families or associations (Pouliot 2012, Sausey *et al.* 2008). Except, people's sex ($X^2 = 3.617$, p-value = 0.6058), all factors significantly affected barriers recorded among informants: ethnicity ($X^2 = 151.15$, $p = 2.2e-16$), age ($X^2 = 20.752$, $p = 0.02289$), and climate zone ($X^2 = 25.193$, $p = 0.0001279$). The relative importance of these barriers according to people's socio-cultural traits and locations is presented in Fig. 5. These results indicate that barriers are differently experienced by local communities. Therefore, large-scale promoting of the species will be made possible by addressing specific social-ecological barriers through the development of training and awareness programs integrating the geographical and cultural context of local communities.

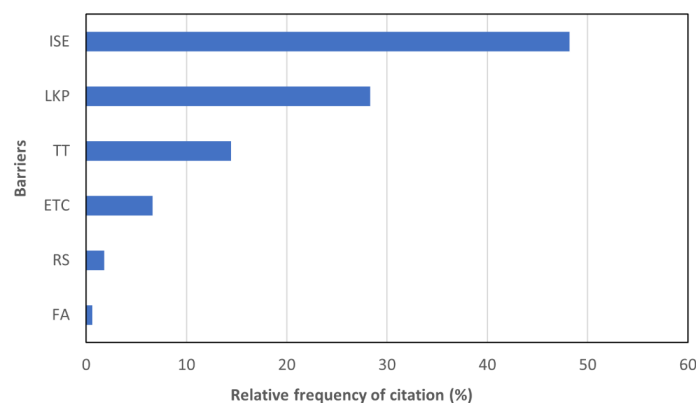


Figure 4. Importance of barriers limiting *T. leontopetaloides* valuation (Note: FA: Female activity, RS: Rare species, TT: Tuber toxicity, ETC: Energy and Time consuming, LKP: Limited knowledge on tuber processing technology and ISE: Ignorance of the species' edibility)

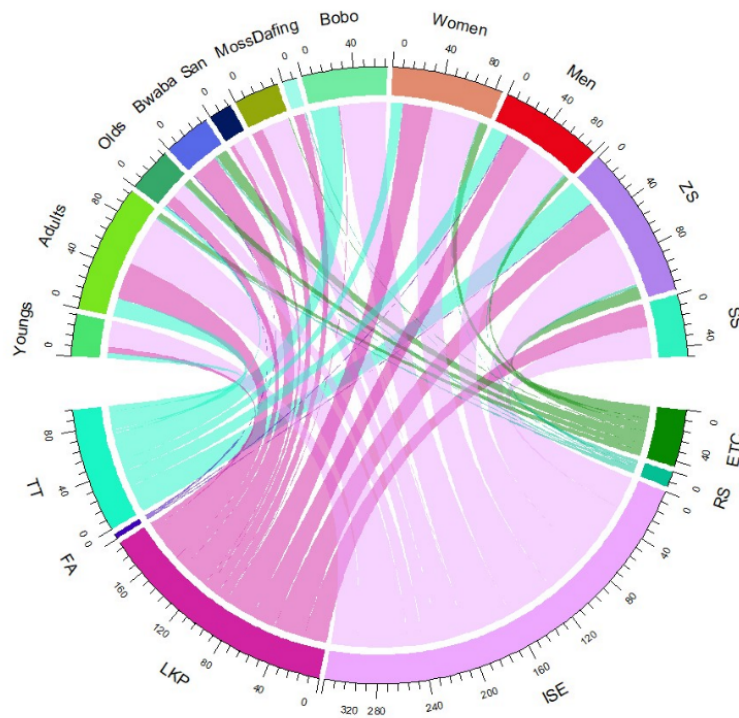


Figure 5. Variability of barriers to *T. leontopetaloides* valuation across people social-cultural traits and locations (Note: SZ: Sudanian Zone, SSZ: Sudano-Sahelian Zone FA: Female activity, RS: Rare species, TT: Tuber toxicity, HS: Habitat specificity, ETC: Energy and Time consuming, LKP: Limited knowledge on tuber processing technology and ISE: Ignorance of the species' edibility)

Traditional techniques for tuber boiling and starch flour extraction

Tubers of *T. leontopetaloides* have a bitter taste which is considered toxic by some people. This is consistent with the findings of Caddick *et al.* (2002), who reported that tubers of the species contain a bitter principle and toxic saponins, which could be removed by soaking, washing and rinsing tubers repeatedly in clean water before being processed for food. In this study, raw tubers were processed in boiled tubers or into starch flour before consumption. For boiled tuber, three treatments or cooking methods were recorded among surveyed communities. The first method consisted of cooking tubers in water two or three times by changing the boiling water in order to eliminate tuber bitterness. The second one involved boiling the tubers until they are well-cooked, then peeling (removing their epidermis, a thin film of skin) and soaking them in water for a few hours to remove their bitterness. The last method consisted of boiling the tubers in mixture with the leaves of *Piliostigma reticulatum* (DC.) Hochst. or *Piliostigma thonningii* (Schumach.) Milne-Redh. According to informants' knowledge, the leaves of these species have a tangy taste, which significantly reduces tuber bitterness and toxicity. This knowledge is consistent with the investigation made by Boualam *et al.* (2021) and Achel *et al.* (2024). The authors found that the leaves of *P. thonningii* and *P. reticulatum* have a high polyphenol content, giving them powerful antioxidant properties, thereby promoting detoxification and food preservation. In India, tubers of *T. leontopetaloides* are usually cooked, boiled with leaves of *Psidium guajava* L. or *Tamarindus indica* L. to avoid the irritating property of the tubers (Misra & Misra 2014).

Regarding tuber processing into starch flour, people adopted six main steps (Fig. 6) as follows:

- Step 1: Wash the tubers thoroughly with clean water to remove all soil particles attached to the surface of the tubers and remove the thin film of skin by scraping the surface of the tubers using a knife.
- Step 2: Grating the tubers in clean water using a fresh rough wood, specifically the wood of a native species called *Pteleopsis suberosa* Engl. & Diels, until they are reduced to a whitish paste mixed with water (optional: sometimes depending on people experience, the mixture is let to rest for one to two hours so that the starch settles at the bottom of the container. Then, the supernatant liquid is removed).
- Step 3: Filtering the mixed paste using a sieve to extract the fresh starch.
- Step 4: Adding and soaking the fresh starch in clean water for a long time (two or three days), after which it is subjected to repeated rinsing twice or three times to eliminate the bitter taste.

- Step 5: Sun-drying the fresh starch to obtain a dry starch in the forms of pieces and/or lumps.
- Step 6: Mashing the pieces and/or lumps of starch in a mortar until a fine white flour is obtained.

The traditional technique adopted by local communities from Burkina Faso for tuber processing into starch flour follows the same general principles as existing ones, with some differences related to the specific material used and rinsing strategies, as well as the duration of starch soaking in water to remove its bitterness. For instance, in the Marshall Islands, tubers are grated using a rough but soft coral, either with their skins intact or with the skin removed beforehand using a paring knife (Spennemann 1994). According to the author, starch is soaked in water for around six hours, divided into two steps of two to three hours to remove bitterness, while in Nigeria, the starch is just rinsed several times (Amadi *et al.* 2021).



Figure 6. Starch flour extraction from tubers of *T. leontopetaloides* following traditional processing technique

Conclusion

The study highlighted the gap between theoretical and practical knowledge of *T. leontopetaloides* within local communities. The species is theoretically well known in all communities, but poorly known in practical use. People's knowledge is mostly related to their socio-ecological context. Barriers to the species domestication and promoting varied significantly across the species distribution zones, ethnic groups, and people's age classes. These findings suggest that the large-scale promotion of the species will be made possible by addressing specific social and ecological barriers through the development of training and awareness programs integrating the geographical and cultural context of local communities. Knowledge in tuber traditional processing technique is held by only 16.52% of respondents, proving the real need for people training to make them able to use the species tubers as food in practice. The traditional technique for starch extraction from tubers comprises six main steps, which need to be improved through the development of an industrial process including the determination of the appropriate immersion time to efficiently eliminate the bitterness of the starch. Our findings will be helpful to stimulate a large-scale use of this wild food species among local communities, contributing to the traditional knowledge preserving and food security in the species distribution areas. To this end, people awareness and training on tuber processing technique is highly recommended.

Declarations

Ethics approval and consent to participate Formal institutional ethical approval was not required. However, the research adhered to established ethical standards for ethnobotanical studies. Before beginning the ethnobotanical study, consent to participate to the interviews was obtained verbally from individual informants. Only people that consented to participate were interviewed. Informants were informed that their participation was voluntary and that all information provided would be treated anonymously and confidentially. Then, the benefits of the study for food security and the sustainable management of the species were also explained, and the interview proceeded when the informant agreed to participate.

Consent for publication: Only images of informants who provided verbal consent were used in the manuscript.

Availability of data and materials: The data used to support the findings of this study are available from the corresponding author upon reasonable request.

Competing interests: The authors declare that they have no competing interests.

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Author contributions: LB: Conceptualization, Formal analysis, Funding acquisition, Methodology, Project administration & Writing - original draft. BSH: Data curation & Writing - review and editing. PCB: Formal analysis & Writing - review and editing. SSD, OO and JIB: Writing - review and editing. All authors approved the final manuscript.

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Literature cited

Achel DG, Manson EN, Ahiave EK, Nyaaba RA, Amable ASK, Abdul-Wahab D, Agbevanu KT, Ziekah F, Gedel AM, Darfour EK. 2024. Nutritional and toxicological assessment of *Piliostigma thonningii* leaves and tubaani food samples: A preliminary investigation. *Journal of Food Science and Technology* 61: 1569-1577. doi: 10.1007/s13197-024-05928-y

Agúndez D, Nouhoheflin T, Coulibaly O, Soliño M, Alía R. 2020. Local preferences for shea nut and butter production in Northern Benin: Preliminary results. *Forests* 11: 13. doi: 10.3390/f11010013

Alrhoun M, Sulaiman N, Pieroni A. 2025. Phylogenetic perspectives and ethnobotanical insights on wild edible plants of the Mediterranean, Middle East, and North Africa. *Foods* 14: 465. doi: 10.3390/foods14030465

Amadi CO, Olojede OA, Ironkwe A, Ebeniro CN, Nwokocha CC, Amadi G, Ejokwu GA. 2021. Prospects of domestication of Polynesian arrowroot (*Tacca leontopetaloides* L.) in Nigeria. *Nigerian Agricultural Journal* 52(3) :184-196. <https://www.naj.asn.org.ng/>

Arini DID, Kuswanda W, Kinho J, Irawan A F. 2025. Strengthening anoa (*Bubalus* spp.) conservation based on social and cultural community values in Wallacea Bioregion, Indonesia. *Ethnobiology and Conservation* 14. doi: 10.15451/ec2024-12-14.05-1-17

- Avocécou-Ayisso C, Avohou TH, Oumorou M, Dossou G, Sinsin B. 2012. Ethnobotany of *Pentadesma butyracea* in Benin: A quantitative approach. *Ethnobotany Research and Applications* 10: 151-166. <https://ethnobotanyjournal.org/index.php/era/article/view/447>
- Bevacqua RF. 1994. Origin of horticulture in Southeast Asia and the dispersal of domesticated plants to the Pacific Islands by polynesian voyagers: the Hawaiian Islands case study. *HortScience* 29(11): 1226-1227. doi: 10.21273/HORTSCI.29.11.1226
- Boualam K, Ndiaye B, Harhar H, Tabyaoui M, Ayessou N, Taghzouti K. 2021. Study of the phytochemical composition, the antioxidant and the anti-inflammatory effects of two Sub-Saharan plants: *Piliostigma reticulatum* and *Piliostigma thonningi*. *Advances in Pharmacological and Pharmaceutical Sciences* 1: 5549478. doi: 10.1155/2021/5549478
- Bougma CP, Bondé L, Yaro VSO, Nikiéma B, Ouédraogo O. 2025. Socio-ecological factors contributing to the use of slash-and-burn as cropland preparation practice in Burkina Faso. *Scientific African* 28: e02736. doi: 10.1016/j.sciaf.2025.e02736
- Bruschi P, Mancini M, Mattioli E, Morganti M, Signorini MA. 2014. Traditional uses of plants in a rural community of Mozambique and possible links with Miombo degradation and harvesting sustainability. *Journal of Ethnobiology and Ethnomedicine* 10(59): 1-22. Doi:10.1186/1746-4269-10-59
- Caddick RC, Wilkin P, Rudall PJ, Hedderon TAJ, Chase MW. 2002. Yams reclassified: A recircumscription of *Dioscoreaceae* and *Dioscoreales*. *Taxon* 51(1): 103-114. <https://www.jstor.org/stable/1554967>
- Dipama JM. 2010. Climate. In: Thiombiano A, Kampmann D (eds). *Biodiversity atlas of West Africa, volume II: Burkina Faso*. Ouagadougou & Frankfurt/Main, Pp. 122-124.
- FAO. 2019. *The state of the world's biodiversity for food and agriculture*, Rome, Italy
- Fontes J, Guinko S. 1995. Carte de la végétation et de l'occupation du sol du Burkina Faso. Notice explicative, Ministère de la Coopération française, projet Campus, Toulouse, 1995, p. 68
- Hahn K, Schmidt M, Thiombiano A. 2019. The potential of wild plant food resources in Burkina Faso (West Africa). In: Barbara E, Höhn A. (eds). *Trees, grasses and crops: People and plants in Sub-Saharan Africa and beyond*, Verlag Dr. Rudolf Habelt GmbH, Germany, Pp.157-171.
- Hahn K, Schmidt M, Thiombiano A. 2018. The use of wild plants for food: A national scale analysis for Burkina Faso (West Africa). *Flora et Vegetatio Sudano-Sambesica* 21: 25-33. doi: 10.21248/fvss.21.57.
- Heywood VH. 1999. *Use and potential of wild plants in farm households*. FAO Farm System Management Series, Rome, 1999.
- Khakurel D, Uprety Y, Łuczaj L, Rajbhandary S. 2021. Foods from the wild: Local knowledge, use pattern and distribution in Western Nepal. *PLoS ONE* 16: e0258905. doi: 10.1371/journal.pone.0258905
- Mishra A, Swamy SL, Thakur TK, Bhat R, Bijalwan A, Kumar A. 2021. Use of wild edible plants: Can they meet the dietary and nutritional needs of indigenous communities in central India. *Foods* 10 (7): 1453. doi: 10.3390/foods10071453
- Misra S, Misra, MK. 2014. Ethno-botanical study of plants with edible underground parts of south Odisha, India. *International Journal of Agriculture and Food Sciences* 4 (2): 51-58.
- Nadembega P, Boussim IJ, Nikiema JB, Poli F, Antognoni F. 2011. Medicinal plants in Baskoure, Kouritenga province, Burkina Faso: An ethnobotanical study. *Journal of Ethnopharmacology* 133 (2): 378-395. doi: 10.1016/j.jep.2010.10.010
- Nahar N, Rahman M, Miah M, Hasan M. 2024. The impact of crop diversification on food security of farmers in Northern Bangladesh. *Agriculture & Food Security* 13 (9): 1-13. doi: 10.1186/s40066-023-00463-z
- Ndouyang CJ, Ejoh AR, Facho B, Njintang YN, Mohammadou BA, Mbofung CM. 2009. Valeur nutritionnelle de *Tacca leontopetaloides* (L.) Kuntze, tubercule non conventionnel. *Revue génie industriel* 3 :18-26.
- Ogbonna AI, Adepoju SO, Ogbonna CIC, Yakubu T, Itelima JU, Dajin VY. 2017. Root tuber of *Tacca leontopetaloides* L. (Kunze) for food and nutritional security. *Microbiology: Current Research* 1 (1): 5-11. doi: 10.4066/2591-8036.16-2241
- Ouédraogo A, Lykke A.M, Lankoandé B, Korbéogo G. 2013. Potentials for promoting oil products identified from traditional knowledge of native trees in Burkina Faso. *Ethnobotany Research and Applications* 11: 071-083. <https://ethnobotanyjournal.org/index.php/era/article/view/826>

- Petersen LM, Moll EJ, Collins R, Hockings MT. 2012. Development of a compendium of local, wild-harvested species used in the informal economy trade, Cape Town, South Africa. *Ecology and Society* 17 (2): 26. <http://dx.doi.org/10.5751/ES-04537-170226>
- Pouliot M. 2012. Contribution of “Women’s Gold” to West African livelihoods: The case of shea (*Vitellaria paradoxa*) in Burkina Faso. *Economy Botany* 66: 234-248. doi: 10.1007/s12231-012-9203-6
- Prakofjewa J, Sartori M, Šarka P, Kalle R, Pieroni A, Söukand R. 2023. Boundaries are blurred: Wild food plant knowledge circulation across the Polish-Lithuanian-Belarusian Borderland. *Biology* 12: 571. doi: 10.3390/biology12040571
- Saussey M, Moity-Maizi P, Muchnik J. 2008. Nouvelles formes de reconnaissance des femmes burkinabè dans la production collective de beurre de karité. *Cahier Agriculture* 17: 582-586. doi: 10.1684/agr.2008.0252
- Schmidt M, Kreft H, Thiombiano A, Zizka G. 2005. Herbarium collections and field data-based plant diversity maps for Burkina Faso. *Diversity and Distribution* 11 (6): 509-516. doi: 10.1111/j.1366-9516.2005.00185.x
- Shackleton S, Cocks M, Dold T, Kaschula S, Mbata K, Mickels-Kokwe G, von Maltitz G. 2010. Contribution of non-wood forest products to livelihoods and poverty alleviation. In: Chidumayo EN, Gumbo DJ. (eds). *The dry forests and woodlands of Africa. Managing for Products and Services*. Routledge, UK, Pp. 93-129.
- Spennemann DHR. 1994. Traditional arrowroot production and utilization in the Marshall Islands. *Journal of Ethnobiology*. 14 (2): 211-234.
- Sultan B, Gaetani M. 2016. Agriculture in West Africa in the twenty-first century: Climate change and impacts scenarios, and potential for adaptation. *Frontiers in Plant Science* 7:1262. doi: 10.3389/fpls.2016.01262
- Termote C, Van Damme P, Dhed’a Djailo B. 2011. Eating from the wild: Turumbu, Mbole and Bali traditional knowledge on non-cultivated edible plants, District Tshopo, DR Congo. *Genetic Resources and Crop Evolution* 58: 585-618. doi: 10.1007/s10722-010-9602-4
- Tiétiambou FRST, Lykke AM, Korbéogo G, Thiombiano A, Ouédraogo A. 2016. Perceptions et savoirs locaux sur les espèces oléagineuses locales dans le KénéDougou, Burkina Faso. *Bois et Forêts des Tropiques* 327:39-50. doi: 10.19182/bft2016.327.a31295
- Traoré L, Ouédraogo I, Ouédraogo A, Thiombiano A. 2011. Perceptions, usages et vulnérabilité des ressources végétales ligneuses dans le Sud-Ouest du Burkina Faso. *International Journal of Biological and Chemical Sciences* 5 (1): 258-278. doi: 10.4314/ijbcs.v5i1.68103
- Ukpabi UJ, Ukenye E, Olojede AO. 2009. Raw-material potentials of Nigerian wild Polynesian Arrowroot (*Tacca leontopetaloides*) Tubers and Starch. *Journal of Food Technology* 7 (4): 135-138.
- Ulian T, Diazgranados M, Pironon S, Padulosi S, Davies L, Howes MJ, Borrell J, Ondo I, Perez Escobar OA, Sharrock S, Ryan P, Hunter D, Lee MA, Barstow C, Łuczaj L, Pieroni A, Cámara-Leret R, Noorani A, Mba C, Womdim RN, Muminjanov H, Antonelli A, Pritchard HW, Mattana E. 2020. Unlocking plant and fungal resources to support food security and promote sustainable agriculture. *Plants People Planet* 2: 421-445. doi: 10.1002/ppp3.10145
- Waha K, Van Wijk M, Fritz S, See L, Thornton P, Wichern J, Herrero M. 2018. Agricultural diversification as an important strategy for achieving food security in Africa. *Global Change Biology* 24 (8): 3390 - 3400. doi: 10.1111/gcb.14158
- Wardah, Sambas EN, Ridwan, Ariani D. 2017. Starch product of wild plants species Jalawure (*Tacca leontopetaloides* L.) Kuntze as the source of food security in the South Coastal West Java. *Materials Science and Engineering* 193 (1): 1-10. Doi:10.1088/1757-899X/193/1/012035
- Zerbo I, Bernhardt-Römermann M, Ouédraogo O, Hahn K, Thiombiano A. 2016. Effects of climate and land use on herbaceous species richness and vegetation composition in west african savanna ecosystems. *Journal of Botany* 2016 (1): 9523685. <http://dx.doi.org/10.1155/2016/9523685>
- Zerbo I, Salako KV, Hounkpèvi A, Zozoda D, Glèlè Kakai R, Thiombiano A. 2022. Ethnobotanical knowledge and conservation of *Bombax costatum* Pellegr. and Vuillet: an overexploited savanna tree species. *Trees, Forests and People* 10: 100356. doi: 10.1016/j.tfp.2022.100356