An ethnobotanical survey of medicinal plants used for children's healthcare in Centre-Est Burkina Faso

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Ethnobotany Research and Applications 33:22 (2026) - http://dx.doi.org/10.32859/era.33.22.1-28
Manuscript received: 29/08/2025 – Revised manuscript received: 27/01/2026 - Published: 31/01/2026

Research

Abstract

Background: In Burkina Faso, a large part of population cannot afford conventional medicines, making the plant-based traditional ones essential for healthcare. Despite recent government efforts to ensure children's right to health, the under-five mortality rate remains high. The objective of this study is to establish a comprehensive database of plants commonly used by traditional healers in childhood disease management.

Methods: The survey was conducted in Centre-Est Burkina Faso between May 2019 and October 2023 using open and semi-structured interviews with 43 informants including paediatric traditional healers (22), herb vendors (15), and children's mothers and relatives (6). Ethnobotanical data were analyzed using informant consensus factor and fidelity level (FL).

Results: The study documented 185 species from 52 plant families. High informant consensus factor (0.82-0.93) indicates a strong agreement among healers about the therapeutic use of medicinal plants, with malaria being the most frequently treated disease (111 species cited for it). *Vitellaria paradoxa* C.f. Gaertn emerged as the most used species with 100% FL, and Fabaceae (19.2%), Malvaceae (8.6%), Poaceae (8.3%), Rubiaceae (4.7%) and Combretaceae (4.2%) were the most represented families.

Conclusions: This ethnobotanical survey is one of the most important studies in Centre-Est Burkina Faso on medicinal plants paving the way for the management of most frequent childhood's diseases. The findings confirm the widespread use of plants in paediatric healthcare and emphasize the key role of traditional healers, particularly women, in local communities.

The survey contributes to safeguarding regional medicinal biodiversity and provides a basis for future phytochemical investigations.

Keywords: African traditional medicine, biodiversity, practitioners, pediatric healthcare, traditional healers.

Background

Burkina Faso is a landlocked Sahelian country, with a population of 23.02 million inhabitants estimated in 2023 (World Bank Group 2024), called Burkinabè. It is a low-income country where the economy is largely based on agriculture. This sector employs 80% of the workforce, and 40.1% of its population lives below the poverty line (Sawadogo 2024). The age pyramid of the country indicates a very young population; the median age is 17.7 years, and 46% of the young is less than 15-year-old, against 30% of the rest of the world (Wasko *et al.* 2022, Database Earth 2025).

Although Burkina Faso benefits from increased government funding and the establishment of a public health code, an exceptional feature in the West African context, the country continues to face major health challenges. The leading causes of mortality include malaria, lower respiratory tract infections, diarrhoeal diseases, stroke, ischaemic heart disease, and neonatal disorders (Bassinga *et al*. 2025). According to the National Nutrition Policy, malaria, neonatal conditions, acute respiratory infections, and diarrhoea remain among the primary contributors to infant and neonatal mortality, while malnutrition is estimated to be an underlying factor in approximately 35% of infant and child deaths (Picbougoum *et al.* 2023).

Despite the United Nations Sustainable Development Goal (SDG) target of reducing under-five mortality to fewer than 25 deaths per 1000 live births, Burkina Faso's rate remains alarmingly high, with 53.41 deaths per 1000 live births reported in 2023 (Database earth 2024). Following the definition proposed by Huang *et al.* (2020), Burkinabé children may be classified as "children with special health care needs": living in one of the poorest countries in the world, they are at elevated risk of developing chronic physical, developmental, behavioral, or emotional conditions, and consequently require greater access to high-quality health and related services.

Access to public healthcare in Burkina Faso remains limited, particularly in rural areas, where the inadequate availability of conventional medicine, combined with poverty and entrenched cultural practices, makes traditional medicine, mainly phytotherapy, a central component of healthcare. As a result, the role of traditional healers is officially recognized by the national health authorities (Ouoba *et al.* 2022a). In recent years, increasing research attention has been devoted to the use of medicinal plants in the treatment of childhood illnesses within rural communities (Ndhlovu *et al.* 2021, 2023, Vissoh *et al.* 2024).

From a natural resource-based perspective, Burkina Faso is characterized by a remarkable biodiversity, with more than 2000 documented plant species, mostly non-cultivated, distributed across 738 genera and 133 families (Zizka *et al.* 2015). Among these, 74.31% are herbaceous and 25.69% woody species (Nacoulma *et al.* 2018). This biodiversity reflects the country's pronounced environmental and climatic gradient, which delineates three main eco-climatic zones: the northern Sahelian zone (annual rainfall 300–600 mm), the central Sudano-Sahelian transition zone (600–900 mm), and the southern Sudanian zone (900–1100 mm) (Dembélé *et al.* 2020).

Despite this remarkable biodiversity, the establishment of a comprehensive database of medicinal plants used in the country remains an urgent need. Furthermore, habitat degradation and increasing urbanization, which directly threaten plant resources, including those of medicinal value, constitute ongoing global challenges (Halder & Jha 2023). In this context, ethnobotanical studies are increasingly recognized as essential tools for supporting local plant management practices and contributing to biodiversity conservation strategies (Kumar *et al.* 2021).

Several ethnobotanical studies have highlighted the importance of plant-based traditional medicine in disease management across Burkina Faso. For instance, a survey conducted in Kourittenga province (east-central region) revealed the extensive knowledge of medicinal plants among traditional healers, with wild herbs constituting the primary source of remedies (Nadembega *et al.* 2011). Other investigations have documented the use of traditional medicine to enhance physical performance (Sama *et al.* 2022) and reported inventories of plant species employed in the treatment of liver (Sombie *et al.* 2018, Tibiri *et al.* 2020), kidney (Lengani *et al.* 2010), and cardiovascular diseases (Compaore *et al.* 2021), as well as viral infections (El Babili *et al.* 2021), obesity (Paré *et al.* 2016), and for their nutraceutical potential (Ramde-Tiendrébéogo *et al.* 2019). Nevertheless, research specifically focused on paediatric health remains scarce (Ndhlovu *et al.* 2023). The present

study documents the knowledge and use of medicinal plants for childhood diseases in Kourittenga province (central-eastern Burkina Faso), with the objective of establishing a comprehensive database of plants commonly used by traditional healers in childhood disease management.

Materials and Methods

Study area

The study was carried out in three rural departments belonging to the Kourittenga province, namely Baskouré, Andemtenga and Koupela (Fig. 1). A total of twelve villages (Wolgo, Rougoulsi, Baskouré, Kiimbila, Tantacko, Gnuughin, Kikiristanghin, Togtenga, Rouroubockin, Digboumalghim, Nakanba, Songretenga) were covered by the ethnobotanical survey. The study area is located 165 km from Ouagadougou in a south-eastern direction, 12° 11′ 0″ N, 0° 26′ 0″ W, at an altitude of 250–300 m on the sea level. Kourittenga province covers about 2622 km^2 with about 479,000 inhabitants in 2019 (Annuaire statistique 2023). The majority of inhabitants (59%) are aged between 0 and 19 and the relative gender distribution is 48.15% men and 51.85% women (Citypopulation 2024). Young men are more interested in non-agricultural activities i.e., small businesses, gold panning and other services and migrate to urban centers, leaving agricultural activities to their elders (Navarro-Pabsdorf & Cuenca-Garcia 2025). Across the province as a whole, the employment rate was 38.0% in the last quarter of 2024 (Sawadogo & Mabugu 2025). People living in most of these villages are very poor and lack access to the public healthcare system (Zon *et al.* 2021). The majority of inhabitants (71%) are illiterate. In fact, 11.7% of them have primary education while 0.8% have secondary education. In Kourittenga province, 30.7% of children aged 6 to 16 years have never attended school and 51.0% are currently enrolled in school while 18.3% dropped out of school (Monographie de la region du Centre-Est 2022).

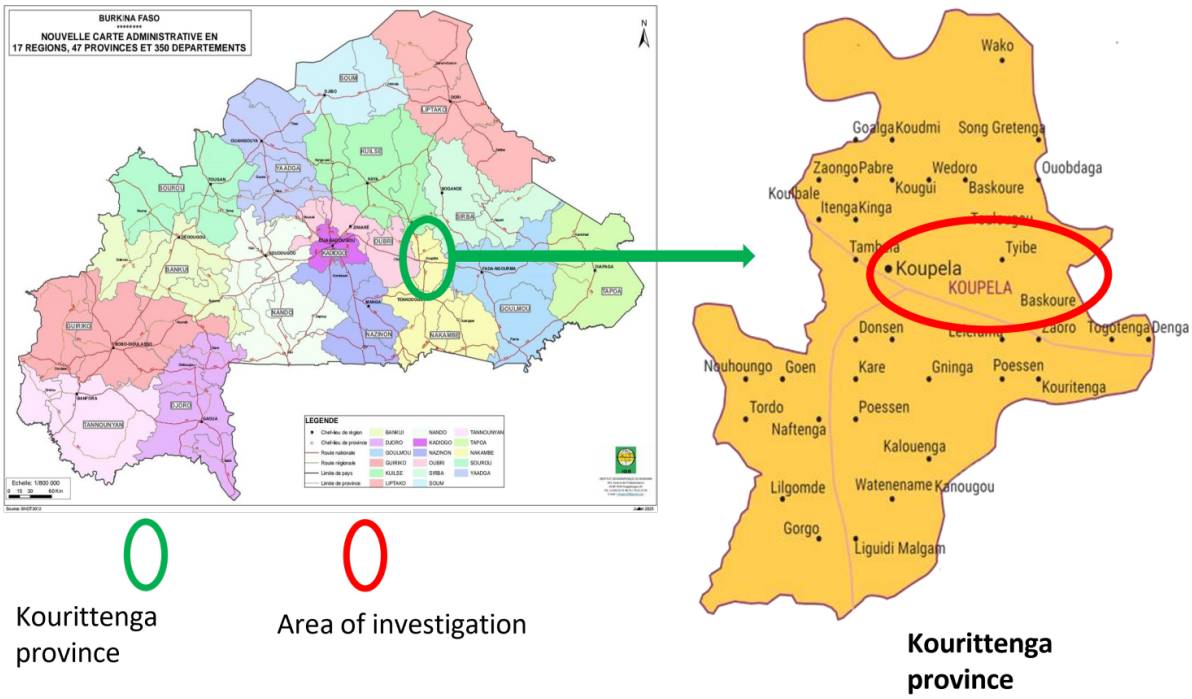

Figure 1. Map of the study area. The green ellipse shows the province and the red one the main villages where the survey was conducted.

Data Collection

According to Martin (2010), the knowledge of local language or dialects is very important in ethnobotanical research in order to clearly understand all information from the traditional healers and practitioners. As it often occurs, the same plant species can have several names in the local language or dialects of even very close areas (Martin 2010). In the study area investigated, three main languages (Mooré, Fulfulde, Gurmancheba) and five dialects (Zaore, Yaana, Sanrende, the Moore of Tenkodogo, Moore of Boulsa) are spoken. The main researcher (P.N.) has a deep knowledge of traditional healers and speaks fluently the local language and dialects of the province. Species identification was preferentially done together with healers during the rainy season, when plants have leaves and flowers. Plant samples were first identified by local name from the traditional healer, and the scientific name was then assigned by the main investigator, using local plant books and identification keys

(Pousset 2004, Thiombiano *et al.* 2012). The family, genus and species of plants were based according to the Catalogue of Life (www.catalogueoflife.org) and the World Flora Online (www.wfo.plantlist.org). Plant voucher specimens were collected and deposited under the herbarium number ID12785 and stacked at the herbarium of the Unité de Formation et de Recherche en Science de la Vie et de la Terre (UFR/SVT) of Ouagadougou University. Some samples of plants collected by the healers are shown in Fig. 2.

Due to the wideness of the survey area, the study took place in the different villages in three time periods: in four villages of Baskouré commune from 2019 to 2022, in five villages of Andemtenga from 2021 to 2023, and in three villages of the urban commune of Koupela from 2019 to 2022. The investigation was carried out in both dry and rainy seasons, even though for interviews and meetings the former was preferred, due to the lower agricultural activities in which traditional healers could have been engaged in.

Interviews were based upon open-ended and semi-structure methods, as previously described by Nadembega *et al.* (2011). At the beginning, basic survey information was collected, such as gender, occupation, and age of the participants. Then, questions related to ethnobotanical knowledge were asked i.e., local plant names, part used, and modes of preparation, etc. Overall, 43 local informants, in a range of age from 38 to 85 years, were selected as knowledge holders; they included pediatric traditional healers (51.1%), herbal vendors (34.8%), and children's mothers and relatives (13.9%). Materials used during the interviews included a recorder, a video and photo camera for visual documentation, as well as a notebook to write down some key elements from the interviews. The nature, objectives, data collection methodology, and the ultimate purpose of the study were clearly explained to the informants beforehand, to obtain their consent for the research. All procedures comply with the principles of the International Society of Ethnobiology Code of Ethics (International Society of Ethnobiology, 2006).

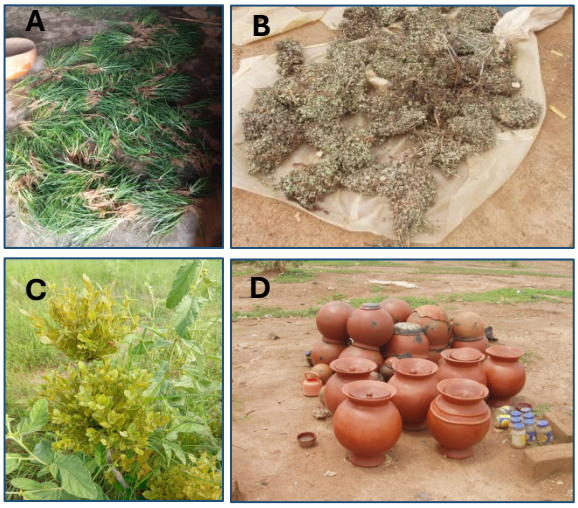

Figure 2. A. Fresh samples of *Eleusine coracana* (L.) Gaernt. subsp. *africana* (Kenn.-O'Byrne) Hilu & de Wet, collected form Baskouré in August 2021; B: Dried samples of *Bauhinia rufescens* Lam. (from the Baskouré market); C: whole plant of *Combretum adenogonium* Steud. ex A.Rich. collected in Baskouré in September 2021; D: typical jars for plant drug storage.

Ethnobotanical Data Analysis

The therapeutic uses of medicinal plants were grouped in categories of diseases according to the catalogue of International Classification of Diseases made by the WHO (Harrison *et al.* 2021). The factor of informant consensus (FIC) was calculated to test the degree of agreement or consistency of the informants' knowledge of medicinal plants per disease category. FIC was calculated as follows:

$$\mathbf{FIC = N_{UR} - N_t / (N_{UR} - 1)}$$

Where N_{UR} is the number of use report for a particular ailment category and N_t is the number of species used for that category mentioned by informants. FIC values range between 0 and 1, where 1 indicates the highest level of informant consensus (Heinrich *et al.* 2018, Aziem *et al.* 2024).

The Fidelity level, FL (%) indicates the percentage of informants stating the use of a certain plant species for the same purpose. FL was calculated as follows:

FL (%) = (Np / N) × 100

Where Np is the number of informants stating the use of a plant species to treat a particular disease; N is the number of informants that use the same plant to treat any given disease.

Results and Discussion

Socio-economic characteristics of informants

In Burkina Faso, the use of plants to treat paediatric illnesses remains widespread, particularly in rural areas (Krohn *et al.* 2023). In this study, 43 informants were interviewed, including pediatric traditional healers (51.1%), herbal vendors (34.8%), and children's mothers and relatives (13.9%). The gender distribution was 27 women and 16 men (Table 1), and most practitioners were younger than 60 years old. Most participants reported more than 10 years of practice experience.

Previous research conducted in southwestern Burkina Faso has shown that women play a key role in paediatric traditional medicine and possess valuable indigenous knowledge related to childhood health needs (Zizka *et al*. 2015). This has led to them being recognised as ideal candidates for full inclusion in biodiversity conservation and sustainable development initiatives (Markham 2013, Ola & Benjamin 2019, Phiri *et al.* 2022). By contrast, men appear to have greater knowledge of veterinary medicinal plants compared to women, as reported by Traoré *et al.* (2020) in a study of cattle treatments in southwestern Burkina Faso. This finding highlights significant gender-based differences in medicinal plant knowledge.

Table 1. Demographic profile of informants (n = 43).

Factor	Characteristics	No. of respondents	Percentage
Gender	Male	16	37%
	Female	27	63%
Age group (years)	30-60	30	70%
	> 60	13	30%
Location	Baskouré	11	25%
	Andemtenga	17	39%
	Koupela	15	36%
Experience as practitioners (years)	< 1	0	0
	1-5	5	11%
	5-10	18	41%
	> 10	20	48%

Overview of the generated plant inventory used for treating childhood diseases

In Burkina Faso, particularly in rural areas, the use of plants is still crucial in the treatment of various illnesses (Zizka *et al.* 2015, Ouoba *et al.* 2022b). The survey reported 185 plant species used in children's healthcare, belonging to 52 plant families and 141 genera (Table 2**)**. The number of recorded plants herein used to manage pediatric ailments was relatively higher compared to 82 and 61 plants reported in Benin (Vissoh *et al.* 2024) and South Africa (Ndhlovu *et al.* 2023), respectively, and this can be related to the reported high plant diversity of the south-eastern part of Burkina Faso (Schmidt *et al*. 2005). In our study, Fabaceae was the most prevalent plant family (19.2%), followed by Malvaceae (8.6%), Poaceae (8.3%), Rubiaceae (4.7%) and Combretaceae (4.2%). These families have also been reported as dominant for medicinal uses in other ethnobotanical studies conducted in Burkina Faso (Ouédraogo *et al.* 2020, Kam *et al.* 2020, Zizka *et al.* 2015), and, more generally, they reflect the most valuable woody species in the Sahel zone of the country, as reported by Bayen *et al.* (2024). Likewise, another study carried out in Southeastern Burkina Faso revealed 77 plant species from 27 families, with Fabaceae, Combretaceae, Malvaceae, and Rubiaceae representing the most prevalent families (Ouédraogo *et al.* 2014), and a similar composition of valuable woody species was reported in the Southwestern region by Traoré *et al.* (2019). This dominance may be explained by the large number of plant species belonging to these families that are well adapted to the environment of the study area, which has led to their widespread utilization and to the expansion of ethnobotanical knowledge among the local population.

Table 2. Plants used for children treatment.

Family	Species	Vernacular name	Habit	Part used	Preparation	Ethnobotanical uses	N. of Reports
Malvaceae	*Abelmoschus esculentus* (L.) Moench	**Mãandtiiga**	herb	fruit	decoction	malaria, vermifuge	2
Fabaceae	*Abrus precatorius* L.	**Liima**	herb	roots	maceration	eye pain, cough	2
Malvaceae	*Abutilon grandifolium* (Willd.) Sweet	**Wobg-Beerga**	shrub	ears, branch	decoction	cough	1
Asteraceae	*Acanthospermum hispidum* DC.	**Giama Tan**	herb	whole plant	decoction	hepatitis, jaundice, icter	1
Amaranthaceae	*Achyranthes sicula* (L.) All.	**Baag-Yewi**	herb	whole plant	decoction	cough, catarrh, cold	2
Malvaceae	*Adansonia digitata* L.	**Tweega**	tree	stem bark	calcining, decoction, powder	measles	5
Zingiberaceae	*Aframomum melegueta* K.Schum.	**Zumbri**	herb	seeds	decoction	ulcer, furnculosis	2
Vitaceae	*Afrocayratia gracilis* (Guill. & Perr.) J.Wen & Z.D.Chen	**Logmesgo**	liana	root, branch	Maceration, decoction	skin eruptions, dermatosis, skin wounds	1
Fabaceae	*Albizia chevalieri* Harms	**Duãduãga**	tree	roots	decoction	malaria, headache, flank pain	2
Amaryllidaceae	*Allium cepa* L.	**Sasinsala**	herb	bulb	powder	cough, nighmares	2
Amaryllidaceae	*Allium sativum* L.	**Laye**	herb	bulb	powder	cough, nightmares	3
Asparagaceae	*Aloe buettneri* A.Berger	**Mintipa/Walpetubre**	herb	Leale, bulb	decoction	malaria, ulcer	2
Vitaceae	*Ampelocissus africana* (Lour) Merr.	**Bugsemtungu**	liana	tubercle	Maceration, powder	stomach ache, manutrition	2
Poaceae	*Andropogon canaliculatus* Schumach.	**Mokanga**	herb	whole plant	calcining	drepanocytosis	1
Poaceae	*Andropogon gayanus* Kunth	**Wemmoodo**	herb	stem	decoction	unconsciousness	1
Annonaceae	*Annona senegalensis* Pers.	**Barkudga**	shrub	Roots, leaves	Decoction, powder	malaria, jaundice, hepatitis, cough, general weakness, chronic wounds, premature born, rectum inflammation, stomachache, ulcer, bloody diarrhoea, flank pain	9
Fabaceae	*Arachis hypogaea* L.	**Sigkaam/ Naguri**	herb	Leaves, whole plant, seeds	Decoction	malaria, early weaning, bronchitis, eye pain	5
Meliaceae	*Azadirachta indica* A.Juss.	**Panguda**	tree	Leaves, bough	decoction	malaria, jaundice, icter, hepatitis, bronchitis	2

Zigophyllaceae	*Balanites aegyptiaca* (L.) Delile	**Kiagelga**	tree	Roots, young plant, stem bark	Maceration, powder, decoction, calcining	malaria, hepatitis, jaundice, colic, stomachache, kids nightmares, diarrhoea, thoracic pain, ringworm,epistaxis, miction pain, scorpion bit, dermatosis, prevention of meningitis	16
Fabaceae	*Bauhinia rufescens* Lam.	**Ti-Poeya**	tree	stem bark	decoction	stomachache, diarrhoea, epilepsy, nightmares, cough	4
Elatinaceae	*Bergia suffruticosa* (Delile) Fenzl	**Kwiribkwiribi**	herb	whole plant	decoction	fortificant for kids	1
Malvaceae	*Bombax costatum* Pellegr. & Vuillet	**Voaaka**	tree	stem bark	Decoction, maceration	diarrhoea, dermatosis, epistaxis, nightmares	7
Arecaceae	*Borassus aethiopum* Mart.	**Koãga**	tree	Bulb, stem bark	Maceration, calcining	malaria, kids rectum inflammation	2
Apocynaceae	*Calotropis procera* (Aiton) W.T.Aiton	**Putrupuugu**	shrub	roots	Decoction, maceration	malaria, inflammations, skin disorder, cough, toothache, otitis	4
Fabaceae	*Canavalia ensiformis* (L.) DC.	**Wagtiia**	liana	branch	decoction	skin disorders	1
Lamiaceae	*Cantinoa americana* (Aubl.) Harley & J.F.B.Pastore	**Zizigla/ Sumwaaga**	herb	whole plant	decoction	malaria, jaundice, hepatitis, ulcers, nightmares	10
Solanaceae	*Capsicum annuum* L.	**Kambi/ Kipiarga**	herb	fruit,	maceration, calcining, powder, decoction	bloody diarrhoea, drepanocytosis, cough, stomachache	6
Capparaceae	*Capparis sepiaria* L.	**Kalyanga, lamgwitenga, lamgongo**	liana	Roots, branch with fruit, leaves, flowers	Decoction, maceration	malaria, weakness, bodyswelling, fortification, tonification, otitis, eye pain, stomachache	7
Caricaceae	*Carica papaya* L.	**Papar Tiiga**	herb	leaves, fruit, cough	decoction	malaria, vermifuge, icter, jaundice, hepatitis	3
Fabaceae	*Cassia sieberiana* DC.	**Yamtiiga**	tree	roots	Maceration, powder, decoction	malaria, stomachache, flank pain, fortification, colic jaundice, hepatitis, anemia, general weakness, rectal inflammation, miction disorders, diabetes	22

Poaceae	*Cenchrus americanus* (L.) Morrone	**Kazui**	herb	Seed, ears	Porridge, maceration, decoction	cough, fortification, jaundice, hepatitis, diarrhoea, tonification, rectum inflammation	13
Apocynaceae	*Ceropegia sudanica* (Bruyns) Bruyns	**Rumkim-Suuga**	herb	tubercle	juice	otitis	1
Fabaceae	*Chamaecrista mimosoides* (L.) Greene	**Ko-Roaga**	herb	stem bark	decoction	malaria	1
Fabaceae	*Chamaecrista nigricans* (Vahl) Greene	**Zanerkuka**	herb	whole plant	Scarification, decoction	malaria, appendicitis, flank pain, navel pain	4
Asteraceae	*Chrysanthellum indicum* DC. subsp. *afroamericanum* B.L. Turner	**Kamga**	herb	whole plant	decoction	general fortification, rehydratation	2
Poaceae	*Chrysopogon nigritanus* (Benth.) Veldkamp	**Roudma**	herb	roots	decoction	epistaxis	1
Vitaceae	*Cissus quadrangularis* L.	**Bourouri**	liana	branch	juice	otitis	1
Cucurbitaceae	*Citrullus colocynthis* (L.) Schrad.	**Niuli Nari**	liana	branch	Powder, decoction	strenghening, colic, flank pain, furunculosis, peritoneal pain	3
Bixaceae	*Cochlospermum planchonii* Hook.fil. ex. Planch.	**Soãs-Gnaaga**	herb	tubercle	inhalation,	malaria,	15
Bixaceae	*Cochlospermum tinctorium* Perr. ex A..Rich.	**Soãs-Raaga**			decoction	jaundice, hepatitis, cough, anemia diabetes, skin burns	
Malvaceae	*Cola nitida* (Vent.) Schott & Endl.	**Gud-Tiiya**	tree	fruit	Juice, masticate	bloody diarrhoea, stomachache, kid fortification, scorpion bits, amoebian diarrhoea, malaria	9
Combretaceae	*Combretum aculeatum* Vent.	**Cocoguargou (Gourmantcheba)**	shrub	leaves	decoction	early weaning	1
Combretaceae	*Combretum adenogonium* Steud. ex. A.Rich.	**Kuilinga**	tree	Root, stem bark, leaves	Decoction, powder	malaria, fever, weakness, headache, miction disorders, amoebian diarrhoea, bloody diarrhoea, kids antiparasitary, diarrhoea, fortification	13
Combretaceae	*Combretum adenogonium* Steud. ex A.Rich.	**Kuilin-Toaga**	shrub	branch	maceration	fortification, strenghtening, early weaning	2
Combretaceae	*Combretum micranthum* G.Don.	**Kakimsaalega, ranga**	tree	stem bark, leaves, branch	Decoction, maceration	malaria, anemia, flank pain, dermatosis, dry cough, diarrhoea	7

Burseraceae	*Commiphora africana* (Rich.) Engl.	**Moumoudinga**	tree	root	decoction	malaria, fever, malnutrition, fortification, early weaning, flank pain	5
Malvaceae	*Corchorus olitorius* L.	**Bulvagka**	herb	leaves	decoction	diarrhea	1
Amaryllidaceae	*Crinum ornatum* (Aiton) Herb.	**Mintontre**	herb	bulbe	maceration	rectum inflammation	1
Rubiaceae	*Crossopteryx febrifuga (*Afzel. ex G.Don) Benth.	**Kum-Wãga**	tree	root	Decoction, powder	icter, jaundice, hepatitis stomachache, lung disorder, menstrual pain, pneumonia, weakness, cough, body and face swelling	5
Fabaceae	*Crotalaria naragutensis* Hutch.	**Wenlebende**	herb	whole plant	decoction	malaria, fever	1
Hypoxidaceae	*Curculigo pilosa* (Schumach. & Thonn.) Engl.	**Kodinki**	herb	whole plant	decoction	malaria	2
Poaceae	*Cymbopogon giganteus* Chiov.	**Kuwega**	herb	Flower, roots, whole plant	Maceration, decoction, calcining	malaria, jaundice, hepatitis, nightmares, bronchitis, cough diarrhoea, amoebian diarrhoea, unconsciousness	9
Poaceae	*Cymbopogon schoenanthus* (L.) Spreng. subsp. *proximus* (Hochst. ex A.Rich.) Maire & Weiller	**Soom-Piiga**	herb	whole plant, flowers, root	decoction, maceration	malaria, diarrhea, fever, cough, nightmares, stomachache, eye pain, amoebian diarrhoea, colic	12
Apocynaceae	*Cynanchum boveanum* Decne. subsp. *boveanum*	**Loguinlosido**	Herb	whole plant	decoction	vomiting	1
Vitaceae	*Cyphostemma flavicans* (Baker) Desc.	**Wamsabre, ritmlidgain**	herb	tubercule	Decoction, maceration, calcining	malaria, bloody diarrhoea, colic, weakness	4
Apocynaceae	*Cynanchum viminale* (L.) L. subsp. *viminale*	**Wobg-Gnaodo**	herb	branch	decoction	vermifuge	1
Fabaceae	*Daniellia oliveri* (Rolfe) Hutch. & Dalziel	**Aõga**	tree	stem bark	decoction	flank pain, tumor, furnculosis	3
Solanaceae	*Datura stramonium* L.	**Zèbla**	herb	leaves	decoction	flank pain	1
Fabaceae	*Detarium microcarpum* Guill. & Perr.	**Kãkagdega**	tree	stem bark, leaves, root	decoction	malaria, stomachache	2
Fabaceae	*Dichrostachys cinerea* (L.) Wight & Arn.	**Susutri**	shrub	root, leaves, cough	Decoction, calcining	fortification, strenghning, bloody diarrhoea	4
Asteraceae	*Dicoma tomentosa* Cass.	**Gomtidga**	herb	whole plant	decoction	malaria, urinary retention	1

Dioscoreaceae	*Dioscorea dumetorum* (Kunth) Pax	**Yeemde**	herb	tubercle	decoction	inflammations	1
Ebenaceae	*Diospyros mespiliformis* Hochst. ex A.DC.	**Gãaka**	tree	stem bark, leaves, fruit	decoction, maceration	malaria, diarrhoea, headache, urinary retention, rectum inflammation, sapling, meningitis, weakness, cough, skin disorders, hemorrhoids, bloody diarrhoea, stregening, guinea worm	20
Asparagaceae	*Dracaena senegambica* (Baker) Byng & Christenh.	**Piindo/ Kantoabga**	herb	roots	decoction	stomachache	1
Poaceae	*Eleusine coracana* (L.) Gaernt. subsp. *africana* (Kenn.-O'Byrne) Hilu & de Wet	**Tabraganga**	herb	whole plant	decoction	malaria, fortification, early weaning, malnutrition, cough	7
Fabaceae	*Entada africana* Guill. & Perr.	**Saparga**	tree	root, leaves	decoction	malaria, hemorrhoids, tumor, furunculosis, leishmaniasis cutaneous, bloody diarrhoea, cough, anorectal inflammation	6
Myrtaceae	*Eucalyptus globulus* Labill.	**Kaliptis**	tree	Branch, leaves	decoction	malaria, jaundice, hepatitis	1
Euphorbiaceae	*Euphorbia balsamifera* Aiton	**Sambrabelle**	shrub	bough	decoction	whooping cough	1
Euphorbiaceae	*Euphorbia convolvuloides* Hochst. ex Benth	**Wuan-Biis Gnaaga**	herb	whole plant	juice	diarrhoea, bleeding diarrhoea	2
Euphorbiaceae	*Euphorbia granulata Forssk.*	**Wuan-Biis Raa**	herb	whole plant	Decoction, juice	diarrhoea, fortification	2
Euphorbiaceae	*Euphorbia hirta* L.	**Wuanbiigna-Wudgu**	herb	Whole plant	decoction	bloody diarrhoea	1
Euphorbiaceae	*Euphorbia kamerunica* Pax	**Guaan**	shrub	bough	juice	otitis	1
Euphorbiaceae	*Euphorbia paganorum* A.Chev.	**Tak-Sèlle Raaga**	shrub	stem bark	maceration	chronic wound, fortification, body swelling	3
Fabaceae	*Faidherbia albida* (Delile) A.Chev.	**Zaãga**	tree	stem bark	decoction	cough	2
Rubiaceae	*Feretia apodaenthera* Delile	**Poinr-Komga, parwiiga**	shrub	Leaves, leaves, roots, cough	decoction, maceration, powder	malaria, diarrhoea, vomiting, head ache, fortification, stomachache, colics	10
Moraceae	*Ficus platyphylla* Delile	**Kankan-Van-Lapsa**	tree	branch	decoction	malaria, fever	1
Moraceae	*Ficus sur* Forssk.	**Womsiaa**	tree	fruit	decoction	eraly weaning	1
Moraceae	*Ficus sycomorus* L.	**Kankang-Ditre**	tree	stem bark	decoction, juice	diarrhea, jaundice, hepatitis, icter, allergies, itching, invigorating, navel pain, skin	9

						disorders, cough, tuberculosis, rectum inflammation	
Moraceae	*Ficus thonningii* Blume	**Kankan-Siigna**	tree	Root, branch, leaves	Maceration, decoction	weakness, malaria, skin disorders, cough, pneumoniae	9
Euphorbiaceae	*Flueggea virosa* (Roxb. ex Willd.) RoyleVoigt	**Sugdaaga**	shrub	root, leaves, stem bark, branch	Calcining, decoction	malaria, jaundice, hepatitis, flank pain, diarrhoea, ulcers, cough, stomachache	9
Rubiaceae	*Gardenia aqualla* Stapf & Hutch.	**Namzuuding Palaaga, baasusbi**	shrub	stem bark, roots	decoction	weakness, swelling face and body, stomachache, malaria	4
Rubiaceae	*Gardenia erubescens* Stapf & Hutch.	**Subudga**	shrub	leaves, stem bark, roots	decoction	malaria	1
Rubiaceae	*Gardenia sokotensis* Hutch.	**Tangnamzudinga, tangrakweega, tangrambrezugga**	shrub	Leaves, roots, stem bark	Decoction, powder	malaria, fever, weakness, jaundice, heptatis	3
Rubiaceae	*Gardenia ternifolia* Schumach. & Thonn.	**Sumbragalengaaga**	shrub	fruit	decoction	malaria, otitis, malnutrition, early weaning	3
Malvaceae	*Gossypium hirsutum* L.	**Lamtiiga**	herb	leaves,	juice	bilharzia	1
Malvaceae	*Grewia flavescens* Juss.	**Soomkondo, Peokugda**	shrub	roots	Decoction, maceration	chest pain, pneumoniae, tuberculosis, cough, hepatits, jaundice	5
Malvaceae	*Grewia lasiodiscus* K.Schum.	**Gnedga**	shrub	Leaves, stem bark	decoction	diarrhoea, malnutrition	2
Malvaceae	*Grewia tiliifolia* Vahl	**Yoalga**	tree	Branch, leaves	decoction	malaria	1
Combretaceae	*Guiera senegalensis* J.F.Gmel.	**Puglum**	shrub	Leaves, roots	decoction, powder	malaria, stomachache, strenghening, dry cough, colics	9
Asteraceae	*Gymnanthemum coloratum* (Willd.) H. Rob. & B.Kahn	**Koaag-Sãfande**	herb	Leave, branch	decoction	stomachache, prurity, hepatitis, jaundice, malaria, itching, allergy	3
Celastraceae	*Gymnosporia senegalensis* (Lam.) Loes.	**Tokvugri**	shrub	root, leaves	decoction	malaria, nervous malaria, strenghening	2
Cleomaceae	*Gynandropsis gynandra* (L.) Briq.	**Kienlebdo**	herb	Flower, whole plant	decoction	malaria, otitis	2
Acanthaceae	*Hygrophila auriculata* (Schumach.) Heine	**Kiaga**	herb	whole plant	Decoction, maceration	cough, malaria, fever, kids fortificatio, headache	3
Poaceae	*Hyparrhenia smithiana* (Hook.f.) Stapf	**Zumiuwu**	herb	Whole plant	decoction	malnutrtion	1

Fabaceae	*Indigofera astragalina* DC.	**Rog-Tula**	herb	Whole plant	decoction	wounds	1
Fabaceae	*Indigofera nigritana* Hook.f.	**Voase**	herb	whole plant	decoction	haemorrhoids, headache, malaria, fever, weakness, miction disorders, stomachache, eye pain, amoebian diarrhoea	8
Fabaceae	*Indigofera tinctoria* (L.)	**Garga**	herb	whole plant, roots	Decoction, maceration	bloody diarrhoea, inflammation, navel pain, skin disorders, wounds	4
Convolvulaceae	*Ipomoea asarifolia* (Desr.) Roem. & Schult.	**Banembanto**	herb	branch	maceration	nosebleed, fortification, strenghening	2
Convolvulaceae	*Ipomoea eriocarpa* R.Br.	**Ghinighittu**	herb	branch	decoction	anemia	1
Meliaceae	*Khaya senegalensis* (Desv.) A.Juss.	**Kuka**	tree	stem bark	Paste, decoction	malaria, allergies, heavy itching, diabetes, furunculosis, tumor, skin disorders, dermatosis, drepanocitosis,scorpion bites	10
Crassulaceae	*Kalanchoe lanceolata* (Forssk.) Pers.	**Kanr-Yogdo**	herb	Whole plant	decoction	navel pain, malaria	2
Cucurbitaceae	*Lagenaria siceraria* (Molina) Standl.	**Tungu/Wamde**	liana	Branch	Decoction, juice	otitis, malaria, fever	2
Anacardiaceae	*Lannea acida* A.Rich.	**Sãbtuliga**	tree	stem bark	decoction	Itching, allergy, dermatosis, nosebleed	6
Anacardiaceae	*Lannea acida* A.Rich.	**Sibga**	tree	leaves, stem bark	decoction	malaria, fever, hemorrhoids, inflammation	4
Anacardiaceae	*Lannea velutina* A.Rich	**Wamsabga**	tree	stem bark	decoction	flank pain, kids pneumonia	2
Verbenaceae	*Lantana ukambensis* (Vatke) Verdc.	**Niuli Sibi**	herb	roots	decoction	strenghening, cough, tuberculosis	2
Acanthaceae	*Lepidagathis anobrya* Nees	**Yuu-Nao-Kida**	herb	whole plant	decoction	malaria, rectal inflammation, general weakness	3
Apocynaceae	*Leptadenia lanceolata* (Poir.) Goyder subsp. *lanceolata*	**Lelongo**	herb	leaves, stem bark	decoction	cough, rectal inflammation, newborn weakness	3
Celastraceae	*Loeseneriella africana* (Willd.) R.Wilczek	**Zibri**	liana	Leaves, branch	Decoction, maceration	malaria, weakness	3
Anacardiaceae	*Mangifera indica* L.	**Montiiga**	tree	Leaves, bough	decoction	malaria, jaundice, hepatitis, cough, vermifuge, amoebian diarrhoea	6
Martyniaceae	*Martynia annua* L.	**Niula**	herb	leave	calcining	malaria, nervous malaria	1

Rubiaceae	*Mitragyna inermis* (Willd.) Kuntze	**Yilga**	tree	stem bark, leave, bough	decoction	malaria, cough, fever, diurectic, hepatitis, jaundice	6
Rubiaceae	*Nauclea latifolia* Sm.	**Guunga**	tree	Roots, leaves	decoction	malaria	1
Solanaceae	*Nicotiana tabacum* L.	**Taba**	herb	leave	Powder, calcining	cough, asthma, tuberculosis	2
Nymphaeaceae	*Nymphaea lotus* L.	**Gouiina**	herb	Tubercule, leaves	decoction	skin disorders, itching, general weakness	2
Lamiaceae	*Ocimum americanum* L.	**Yusinyuudu**	herb	whole plant	decoction	malaria, cough, jaunidce, hepatitis	2
Poaceae	*Oryza sativa* L.	**Moui**	herb	corn	maceration	early weaning, cough	2
Poaceae	*Panicum subalbidum* Kunth	**Koalinkoaga**	herb	whole plant	decoction	eye pain, malaria	3
Fabaceae	*Parkia biglobosa* (Jacq.) R.Br. ex G.Don	**Roãga**	tree	leave, root, death bark, seed, stem bark, shea butter	decoction, powder, calcining	malaria, haemorrhoids, inflammation, cough, stomachache, rectal inflammation, diarrhoea, itching, furunculosis, dermatosis, toothache, colics, diabetes, mouth wounds, flank pain, anemia, otitis, weakness	37
Rubiaceae	*Pavetta crassipes* K.Schum.	**Mokbiisri/ Sagmiisri**	shrub	Leaves, stem bark	decoction	weakness	1
Fabaceae	*Piliostigma reticulatum* (DC.) Hochst.	**Bãgê-Daaga**	shrub	stem bark, leavers	decoction	malaria, cough, early weaning, general weakness, bloody diarrhoea, parasitosis, diarrhoea	4
Fabaceae	*Piliostigma thonningii* (Schumach.) Milne-Redh.	**Bãgê-Gnaaga**	shrub	Roots, leaves, stem bark	decoction	nervous malaria, rectum inflammation, jaundice, hepatitis, icter, diuretic, bloody diarrhoea, guinea worm, strenghening, cough, chronic wounds	10
Piperaceae	*Piper nigrum* L.	**Mansuuro**	herb	seeds	Maceration, decoction	ulcers, furunculosis, abscesses, cough, stomachache, bloody diarrhoea, drepanocytosis, diabetes	5
Acanthaceae	*Pogonospermum ciliare* (L.fil.) Hochst.	**Wibguin-Tiimni**	herb	whole plant	powder	cough	1

Polygalaceae	*Polygala multiflora* Poir.	**Tugui**	herb	stem	decoction	jaundice	1
Portulacaceae	*Portulaca quadrifida* L.	**Ting-Kwi-Tem-Kwi**	herb	whole plant	juice	fortification	1
Meliaceae	*Pseudocedrela kotschyi* (Schweinf.) Harms	**Ti-Tore**	tree	stem bark	Decoction, paste	toothache, furunculosis, tumor, peritoneal furunculosis	3
Myrtaceae	*Psidium guajava* L.	**Guyak-Tiiya**	tree	Leave, bough	Decoction, juice	malaria, jaundice, hepatitis, diarrhoea	4
Fabaceae	*Pterocarpus erinaceus* Poir.	**Nonoigna**	tree	bough	decoction	nosebleed	1
Amaranthaceae	*Pupalia lappacea* (L.) A.Juss.	**Yoinstabdo**	herb	whole plant, fruit, root	Decoction, maceration	malaria, skin desorder, inflammations, strenghening	3
Malvaceae	*Sabdariffa cannabina* (L.) M.M.Hanes & R.L.Barrett	**Beerga**	herb	bough, ears	decoction	malaria, fortification, colic, navel disorders, weakness, drepanocytose, ulcers, unconsciousness, vomiting	13
Malvaceae	*Sabdariffa gossypiifolia* (Mill.) M.M.Hanes & R.L.Barrett	**Bitto**	herb	Leaves, whole plant	Decoction, calcining	measles, drepanocytosis, epilepsis	3
Poaceae	*Saccharum officinarum* L.	**Kankansiido**	herb	leaves	decoction	cough	1
Anacardiaceae	*Sclerocarya birrea* (A.Rich.) Hochst.	**Noãbga**	tree	stem bark	powder	diarrhea, skin eruptions, dermatosis	4
Polygalaceae	*Securidaca longipedunculata* Fresen.	**Pelga**	tree	root, stem bark	Decoction, maceration, powder	malaria, fever, stomachache, diabetes, headache, nightmares	9
Fabaceae	*Senegalia gourmaensis* (A.Chev.) Kyal. & Boatwr.	**Gompagnalega**	tree	Roots, branch	Decoction, maceration	premature born, fortification, tonification, swelling of body and face, flank pain, malaria, navel pain, eye pain, weakness	8
Fabaceae	*Senegalia macrostachya* (Rchb. ex DC.) Kyal. & Boatwr.	**Sinsindinga**	shrub	branch	Calcining, decoction	fever, malaria, flank pain, kid stomachache, headache,	6
Fabaceae	*Senegalia pennata* (L.) Maslin	**Kanre**	liana	leaves	Decoction, calcining, infusion	malaria, cough, dermatosis, fever, bronchitis, nightmares, virtigo, itching, headache	12
Fabaceae	*Senegalia senegal* (L.) Britton	**Gõpealega**	tree	stem bark	decoction	appendicitis	1
Fabaceae	*Senna italica* Mill.	**Yargnamde**	shrub	roots	decoction	malaria, vermifuge, weakness, flank pain, urinary retention	4

Fabaceae	*Senna occidentalis* (L.) Link	**Nayunakoilinga**	herb	Leaves, bough	decoction	malaria, asthma, bloody diarrhoea	4
Fabaceae	*Senna siamea* (Lam.) H.S.Irwin & Barneby	**Kasse Tiiga**	tree	Branch, flowers	decoction	malaria, hepatitis, jaundice, bronchitis	2
Fabaceae	*Senna singueana* (Delile) Lock	**Gelwaka**	shrub	Leaves, bough	decoction	malaria, fever, hepatitis, jaundice, colics	3
Fabaceae	*Senna tora* (L.) Roxb.	**Sigdre**	herb	leaves	calcining	hypertention, anemia	1
Pedaliaceae	*Sesamum indicum* L.	**Siili**	herb	plant with fruit	maceration	eye pain	1
Pedaliaceae	*Sesamum sesamoides* (Endl.) Byng & Christenh.	**Bundu**		whole plant	decoction	stomachache, diarrhoea, nightmares, scorpion bit	
Malvaceae	*Sida acuta* Burm.fil.	**Samampiisa**	herb	leaves	juice	fever, malaria, weakness	1
Zingiberaceae	*Siphonochilus aethiopicus* (Schweinf.) B.L.Burtt	**Wuan-Guriga ou kiisuma**	herb	whole plant	decoction	malaria	3
Poaceae	*Sorghum bicolor* (L.) Moench	**Ka-Ziingna**	herb	Leaves, ears, seed, roots	Maceration, decoction, powder, paste, calcining	malaria, fortification, obseity, rectum inflammation, navel pain, colics, ulcers, skin disorders, cough, itching, bilarzia, bronchitis, bloody diarrhoea, tuberculosscorpion bites, stomachache, anemia	25
Poaceae	*Sporobolus festivus* Hochst. ex A.Rich.	**Niuli Saase, Wamparkandga**	herb	whole plant	maceration	weakness	1
Poaceae	*Sporobolus pyramidalis* P.Beauv.	**Gansaase**	herb	Whole plant	Decoction, maceration	weakness, early weaning, malnutrition, malaria	2
Verbenaceae	*Stachytarpheta indica* (L.) Vahl	**Kinzuiya**	herb	whole plant	Maceration, decoction	malaria, breast infection, hepatitis, jaundice	2
Malvaceae	*Sterculia setigera* Delile	**Pumpugga**	tree	stem bark	decoction	itching, heart disorders, lung disorders, parkinson disease, asthma, cough, mental disorders	7
Bignoniaceae	*Stereospermum kunthianum* Cham.	**Yilinyiiga**	tree	Root, leaves, stem bark	decoction	malaria, weakness, nightmares, allergies, itching, growth disorders, flank pain	5

Loganiaceae	*Strychnos innocua* Delile	**Mogr-Raaga/Katinpoag-Raaga**	tree	roots	Decoction, powder	hepatitis, icter, jaundice, nosebleed,	2
Loganiaceae	*Strychnos spinosa* Lam.	**Katinpoaga**	tree	Root, bough	Decoction, maceration	malaria, diarrhoea, stomachache, weakness, swelling of body and face	3
Araceae	*Stylochaeton lancifolius* Kotschy & Peyr.	**Vidba/Gouedba**	herb	roots	calcining	skin pain	1
Fabaceae	*Stylosanthes erecta* P.Beauv.	**Sakwi Sabelga**	herb	whole plant	decoction	malaria, haemorrhoids, inflammations, kid malaria, stomachache, hepatitis, jaundice, cough	12
Asteraceae	*Synedrella nodiflora* (L.) Gaertn.	**Gnagkuuma**	herb	Root, whole plant	decoction	malaria, streching, weakness	2
Fabaceae	*Tamarindus indica* L.	**Pusga**	tree	Leaves, stem bark	Decoction, maceration, calcining	malaria, cough, weakness, fortification, chronic wounds, drepanocytosis, dermatosis, stomachache, kids cough, kid diarrhoea, hepatitis, jaundice bilharzia	17
Loranthaceae	*Tapinanthus* sp.	**Welebre**	parasitic	whole plant	decoction	malaria, jaundice, hepatitis, strenghening, colics, stomachache	8
Fabaceae	*Tephrosia bracteolata* Guill. & Perr.	**Wedguemgnena**	herb	whole plant	decoction	malaria	1
Combretaceae	*Terminalia avicennioides* Guill. & Perr.	**Kontre**	tree	Roots, branh	decoction	nervous malaria, diarrhea, prurity, dermatosis, navel pain	3
Combretaceae	*Terminalia engleri* Gere & Boatwr.	**Guiirga**	shrub	stem bark, bough	decoction	bloody diarrehoea, stomachache, rectum inflammation	4
Combretaceae	*Terminalia leiocarpa* (DC.) Baill.	**Siiga**	tree	leaves, root, stem bark	decoction	malaria, fever, bloody diarrhoea, stomachache, diarrhoea, skin desorder, strenghening, dry cough, antiparastic, vermifuge	17
Combretaceae	*Terminalia macroptera* Guill. & Perr.	**Gundry/ Kõdpoko**	tree	stem bark, leaves, root	powder, decoction, maceration	malaria, jaundice, urinary retention, diarrhoea, fever, ulcer	8
Poaceae	*Thelepogon elegans* Roth	**Modo toodo**	herb	Whole plant	decoction	colic, stomachache	1

Zygophyllaceae	*Tribulus terrestris* L.	**Siag-Yala**	herb	Whole plant	maceration	eyes pain	1
Meliaceae	*Trichilia emetica* (Forssk.) Vahl	**Kikirs-Taanga**	tree	roots	decoction	stomach ache	1
Fabaceae	*Vachellia nilotica* (L.) P.J.H.Hurter & Mabb.	**Pianlinga**	tree	Fruit, stem bark	decoction	ulcer, cough, hemorroid,vermifuge, rectum inflammation, chronic wounds	4
Fabaceae	*Vigna subterranea* (L.) Verdc.	**Summinga**	herb	Seed, leaves	Decoction, calcining	malaria, eyes pain, diarrheoa, otitis	5
Fabaceae	*Vigna unguiculata* (L.) Walp.	**Benga**	herb	Seed, flowers, pulp	Decoction, powder	jaundice, hepatitis, cough, ulcer, diarrhoea, overweight, early weaning, body swelling, tooth desorder	12
Fabaceae	*Vigna vexillata* (L.) A.Rich.	**Silig-Benga**	herb	root	decoction	diarrhoea	1
Sapotaceae	*Vitellaria paradoxa* C.F.Gaertn.	**Taãnga**	tree	stem bark, shea butter, fruit, roots	Decoction, cream	nervous malaria, fever, diarrhoea, haemorrhoids, anti-inflammatory, bronchitis, cough, stomachache, headache, vermifuge, unconscious, colic, pneumonia, rectum inflammation, hepatitis, jaundice, icter, throat pain, eye pain, malnutrition, new born skin protection, flank pain, early weaning, wound burn	50
Lamiaceae	*Vitex doniana* Sweet	**Aadga**	tree	Stem bark	decoction	ulcer, cough	3
Lamiaceae	*Vitex madiensis* Oliv.	**Ku-Pog-Adga**	tree	branch	decoction	stomachache, tuberculosis	2
Malvaceae	*Waltheria indica* L.	**Goudgoudi**	herb	whole plant, root, leaves	decoction	malaria, strenghening, jaundice, icter, hepatitis	3
Malvaceae	*Wissadula amplissima* (L.) R.E.Fr.	**Gomtiu Laongo**	*herb*	whole plant, stem bark	decoction	early, weaning, malaria, cough	4
Ximeniaceae	*Ximenia americana* L.	**Leanga**	*tree*	Roots, stem bark, leaves	Maceration, juice, decoction	malaria, rectum inflammation, stomachache, jaundice, hepatitis, bloody diarrhoea, haemorrhoids antiemetic, bleeding diarrhoea, troat pain	17

Annonaceae	*Xylopia aethiopica* (Dunal) A.Rich.	**Lampazussi Kiperinsabelga**	shrub	fruit	Decoction, scarfication	appendicis, flank pain, ulcer, cough, furonculoisis, strenghening	6
Poaceae	*Zea mays* L.	**Kamana**	herb	Leave, bear, fruit	decoction	malaria, bronchitis, constipation, stomachache, indigestion, urinary retention diuretic, toothache, stomachache, ulcer	6
Rutaceae	*Zanthoxylum zanthoxyloides* (Lam.) Zepern. & Timler	**Rapeko**	shrub	stem bark	Scarification, maceration, powder, decoction	ulcer, constipation, diabetitis, colic, bloody diarrhoea, hip disorder, osteoarthritis	4
Zingiberaceae	*Zingiber officinale* Roscoe	**Yãmaku**	herb	roots	Juice, powder, maceration	colic, stomachache, cough	2
Rhamnaceae	*Ziziphus* mauritiana Lam.	**Mugulga**	shrub	young plant, bough	decoction	dysentery, ulcer, stomachache	2
Rhamnaceae	*Ziziphus mucronata* Willd.	**Kiimes-Mugla, Kikiris-Mugla**	shrub	roots	decoction	weakness, urinary retention malaria, toothache diarrhoea	3

Members of the Fabaceae family are widely recognized for their ability to fix atmospheric nitrogen, which enables them to thrive in inhospitable and nutrient-poor habitats. They are also considered valuable sources of flavonoids, lectins, alkaloids, saponins, phenolic acids, and carotenoids (Usman *et al.* 2022). Therefore, phytochemical and pharmacological investigations of the most frequently cited Fabaceae species could lead to the discovery and development of novel nutraceutical and pharmaceutical products. Plant species of the Malvaceae family are globally distributed, particularly in tropical areas, with a high proportion of salt-tolerant species (Garcia-Caparros *et al.* 2023). Several members also have substantial economic importance, such as cola (*Cola* spp.), cotton (*Gossypium* spp.), and okra (*Abelmoschus* spp.) (Walker 2023, Basheer *et al.* 2021). In addition, the Malvaceae family is well recognized as a source of pectic polysaccharides, which are particularly suitable for pharmaceutical formulations (Pal & Raj 2023). By contrast, Poaceae—one of the largest plant families, covering about 20% of the Earth's surface—is mostly dominated by food species and is typically under-represented in traditional medicine compared with other plant families (Gebashe *et al.* 2019). Nevertheless, some Poaceae members have been used in traditional medicine to treat colds, bruises, intestinal parasites, and teething problems (Farouk *et al.* 2023). Various researchers have recently investigated the therapeutic properties of several Poaceae species in an effort to expand the database for natural drug development (Faustino *et al.* 2019, Mishra *et al.* 2021). Accordingly, the high number of citations for the plant families reported herein may be explained by this evidence.

Habit, preparation, and administration methods of medicinal plants

Most of the identified plants were herbs (50%), followed by trees (29%), shrubs (17%), and lianas (4%, Fig. 3). This distribution may, to some extent, reflect the floristic composition of the vegetation in the Centre-Est of Burkina Faso and the climatic conditions of the region. The climate is of the Sudano-Sahelian type, characterized by a short rainy season lasting a few months and a prolonged dry season (Dembélé *et al.* 2020). Most areas of Kourittenga Province fall within the savanna biome, dominated by tree and shrub savannas (Ky *et al.* 2009).

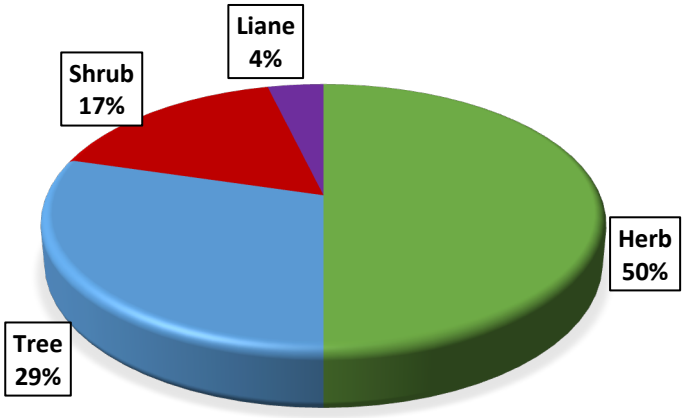

Figure 3. Habit distribution (%) of plants.

According to the data collected, preparations for children's healthcare were mainly obtained through decoction, which accounted for 62% of the recorded species. Other preparation methods included maceration in water (6%), calcination (a drug-processing technique involving prolonged treatment at high temperatures, 6%), powders from dried plants (5%), and creams or poultices (4%). Less frequently, juices and infusions were used (3% and 1%, respectively, Fig. 4). Traditional healers also reported that, in some cases, different preparation methods were combined, indicating a trend toward the adoption of combined therapies.

Other studies conducted in Burkina Faso and neighbouring countries have indicated that decoction is the primary method for herbal drug preparation in traditional medicine (Nadembega *et al.* 2011, Tibiri *et al.* 2020, Zerbo *et al.* 2007), a finding also confirmed by Ouédraogo *et al.* (2020) in a comprehensive study on medicinal plants sold in local markets.

Water was the main solvent used for recipe preparations, likely because it is inexpensive, readily available, and able to dissolve a wide range of chemical compounds commonly found in plants (Bubalo *et al.* 2018). However, additional

ingredients such as milk, *Sorghum* sp. water extract, ash, or honey were also incorporated to improve the solubilization of water-insoluble metabolites.

Different vehicles were employed in remedy preparation, mainly millet (*Cenchrus americanus* (L.) Morrone) and sorghum (*Sorghum bicolor* (L.) Moench) porridge reduced to powder. For creams, either shea butter or milk butter were used. These fatty substances were added to enhance the solubility of lipophilic active compounds, whereas honey was used to improve palatability for children, particularly when bitter plants were used.

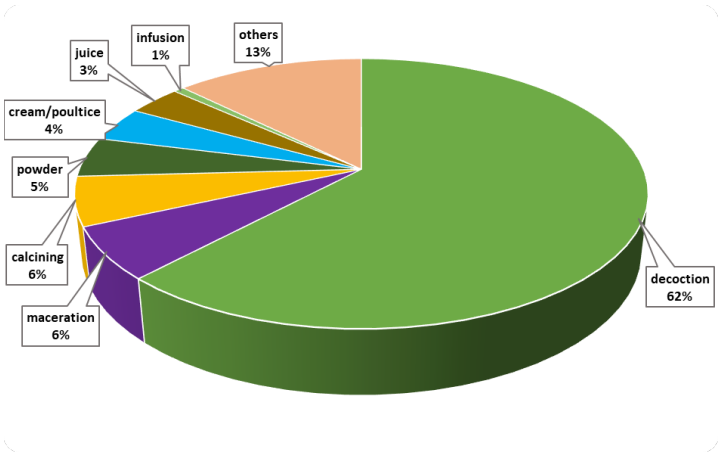

Figure 4. Distribution (%) of preparations of the different herbal medicines in the study area.

Leaves emerged as the most frequently used plant parts for preparing herbal remedies (30%), followed by roots (21%), stem bark and whole plants (13%), branches (10%), fruits/seeds (7%, Fig. 5). This finding is consistent with results from other ethnobotanical studies conducted in the same region of the country (Zerbo *et al.* 2011, Bamogo *et al.* 2023). The predominance of leaves is probably related to their easier accessibility compared with roots. Moreover, according to a centuries-old belief, leaves are especially used to treat fragile patients, such as children, whereas roots are mainly employed in adult healthcare (Mahomoodally 2013). Indeed, roots are generally reported to exhibit higher toxicity than leaves (Gansané *et al.* 2010). In cases where leaves and roots show similar therapeutic activities, the former are preferred over the latter, as this practice also allows for a more sustainable exploitation of plant resources. Given that leaves regenerate and develop more rapidly after harvest, their widespread use in the treatment and management of children's illnesses is encouraging from a conservation perspective. A very large proportion of plants cited by healers were wild species.

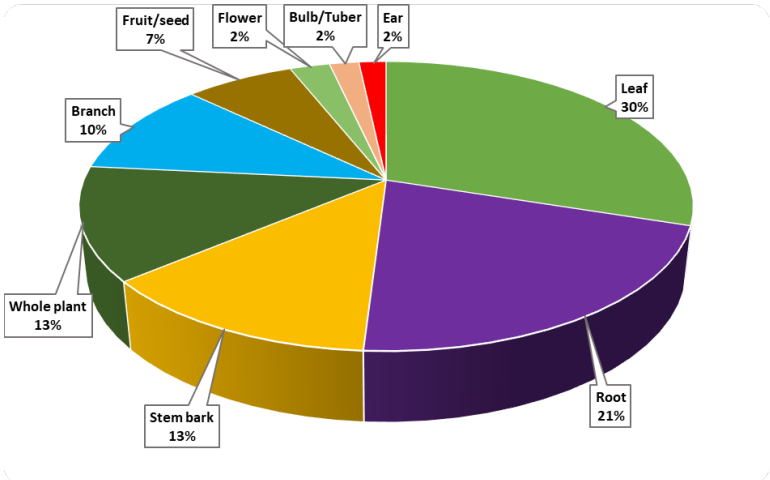

Figure 5. Distribution (%) of plant parts used to prepare herbal preparations in the study area.

Regarding the mode of administration, the oral route was the most frequently reported (42%), followed by body baths (33%) and purges (18%) (Fig. 6). Oral administration, followed by dermal application, has also been reported as the dominant route of administration in previous studies (Benarba *et al.* 2015, Kabre *et al.* 2025). More than one method of administration could be applied simultaneously using the same preparation. For instance, decoctions were sometimes used for bathing, drinking,

and purging. During one interview, a female healer explained that, for the treatment of jaundice, a decoction prepared with *Annona senegalensis* Pers., *Flueggea virosa* (Roxb. ex Willd.) Royle, and *Crossopteryx febrifuga* (Afzel. ex G. Don) Benth. was administered both externally, for washing the patient's entire body, and orally, in the morning and at night before bedtime. Furthermore, this finding suggests that the association of several plants may enhance therapeutic efficacy, in line with previously reported data (Zhou *et al.* 2016). Plant powders were used in various ways: as infusions for drinking, mixed with porridge, for inhalation, and in body creams applied by massage after bathing.

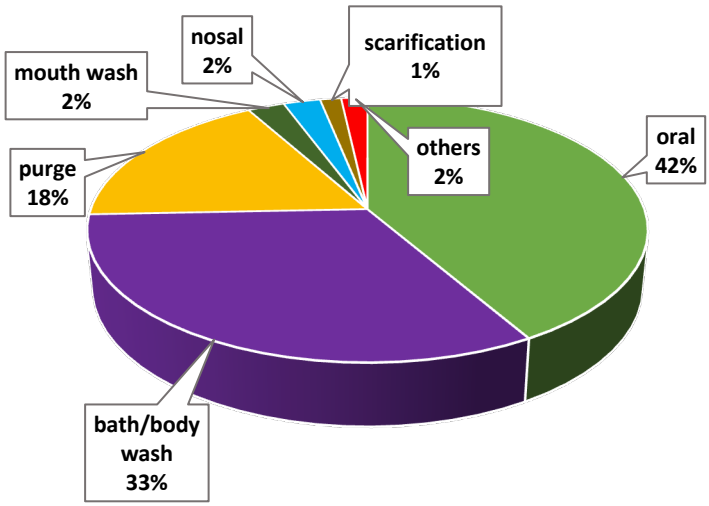

Figure 6**.** Distribution (%) of modes of administration of herbal medicines in the study area.

Informant knowledge and consensus about medicinal plants used for children's healthcare

The factor of informant consensus (FIC) is a quantitative tool useful for identifying plants of particular relevance within a community for specific ailments. It helps prioritize species according to their reported uses, while also providing insights into potential risks of extinction due to overexploitation (de Santana *et al.* 2024). Moreover, FIC values can guide the selection of species for pharmacological studies (Heinrich *et al.* 2018).

In this study, the 185 medicinal plants reported for use in children's healthcare were classified into 12 disease categories based on the International Classification of Primary Care (ICPC) (Gusso 2020), and a FIC value was calculated for each category (Table 3). The average FIC value was 0.88, indicating a high level of agreement among traditional healers regarding the usefulness of plants for treating specific diseases. This finding confirms that, in Burkina Faso, the use of medicinal plants remains a widespread practice for managing childhood illnesses (Tipke *et al.* 2009, Østergaard *et al.* 2016). In particular, high levels of informant consensus were observed for injuries/burns/irritation (FIC = 0.90-0-93), digestive diseases (0.88–0.93), malaria (0.84), and respiratory infections (0.87), which continue to represent the leading causes of childhood morbidity (Marks *et al.* 2021, Simen-Kapeu *et al.* 2021). The most prevalent clinical sign of gastrointestinal disorders is diarrhoea, which may result from both infectious and non-infectious agents. Many phenolic constituents of medicinal plants have been shown to be highly effective in controlling this condition (Njume & Goduka 2012). In immunocompetent individuals, diarrhoea is often abrupt and self-limiting; however, it can be particularly severe in patients with underlying debilitating medical conditions, such as diabetes mellitus or HIV/AIDS. According to Dickin *et al.* (2018), rural areas in Burkina Faso often lack access to safe and clean water, which also contributes to the spread of gastrointestinal illnesses.

According to the FL evaluation, which identifies the most frequently used plants for specific diseases, *Vitellaria paradoxa* C.F. Gaertn. was the preferred species for the treatment of malaria (FL = 100%), *Parkia biglobosa* (Jacq.) G. Don for cough (FL = 79%), and *Cassia sieberiana* DC. for diarrhoea (FL = 47%; Table 4). The high FIC values provide strong support for the therapeutic potential of these species.

Table 3. Factor of Informant Consensus (FIC) concerning the use of plants among informants for each category of diseases. NUR = Number of use reports (NUR); Nt= Number of taxa used for each disease category.

Disease and category	N_{ur}	N_t	FIC
Anorectal disorders (Digestive)	235	17	0.93
Injury/poisoning by external causes	141	11	0.93
(Digestive)	402	42	0.90
Burns/irritation/warts (Skin)	217	22	0.90
Early weaning (Pregnancy, childbearing, family planning)	98	12	0.89
Jaundice/hepatitis (Digestive)	300	35	0.89
Eye diseases	105	12	0.89
Stomach function disorders (Digestive)	419	50	0.88
Cough (Respiratory)	447	58	0.87
Malaria (General and unspecified)	641	100	0.84
Nutritional deficiency (Nutritional/metabolic)	301	51	0.83
Weaknesses (General and unspecified)	88	17	0.82

Table 4. Plants used for different disease categories and their fidelity level (FL).

Used plant	Disease (category)	Use reports	FL (%)
Vitellaria paradoxa C.F.Gaertn.	Malaria (General and unspecified)	50	100
Parkia biglobosa (Jacq.) G.Don	Cough (Respiratory)	37	79
Cassia sieberiana DC.	Diarrhoea (Digestive)	22	47
Diospyros mespiliformis Hochst. ex A.DC	Stomach function disorders (Digestive)	20	43
Ximenia americana L.	Jaundice/hepatitis (Digestive)	17	36
Terminalia leiocarpa (DC.) Baill.	Burns/irritation/warts (Skin)	17	36
Tamarindus indica L.	Nutrition deficiency (Nutritional/metabolic)	17	36
Balanites aegyptiaca (L.) Delile	Early weaning (Pregnancy, childbearing, family planning)	16	34
Cochlospermum planchonii Hock.f. ex Planch. and *C. tinctorium* Perr. ex A. Rich.	Jaundice/hepatitis (Digestive)	12	26

In Burkina Faso, the stem bark of *Vitellaria paradoxa* was the most frequently used plant part for a wide range of newborn conditions, including skin protection and nutrition, malaria, colic pain, and diarrhoea, with 50 reports documented for this species (Table 2). This finding is consistent with Nadembega *et al.* (2011), who also reported *V. paradoxa* as the most widely used plant in the study area. All parts of the species—leaves, stem bark, shea butter, and fruit—as well as its parasitic plant, are known to play important roles in medicine, nutrition (fruit, shea butter), and cosmetics (shea butter). According to informants, shea butter was historically the primary source of lipids in rural areas. Likewise, *Parkia biglobosa* ranked second in FL value and was mainly used for cough treatment, a common respiratory problem during the harmattan season (Odun-Ayo *et al.* 2018). *P. biglobosa* is widespread in this region and is considered a multipurpose species; indeed, nearly every household owns a tree, underscoring its importance in local livelihoods. Different plant parts (bark, leaves, fruits) were used in diverse preparations targeting multiple ailments (Table 2), while the seeds were processed to obtain "Kalgo" in Moore or "Sumbala" in Dioula, a fermented preparation widely consumed both as food and as medicine (Ndir *et al.* 2000). Beyond its nutritional and therapeutic value, "Kalgo" also has strong cultural significance: during traditional weddings, its presence is mandatory among the symbolic gifts offered to stepparents. This exemplifies once again the multiple roles that plants play in African societies, spanning sociocultural, nutritional, and medicinal domains (Atindanbila & Thompson 2011).

Conclusion

This study reports a comprehensive database of plants used by the traditional healers in childhood disease management, and it represents an important milestone in the ongoing efforts to document, preserve, and promote indigenous knowledge in the central-eastern part of Burkina Faso. Malaria, respiratory, metabolic, and digestive disorders emerged as the main categories of paediatric ailments for which plant-based remedies represent the preferential treatment. Since most species are harvested from the wild, this survey constitutes a first step toward developing biodiversity conservation programs for the study area and safeguarding the cultural heritage associated with these plants, which has become increasingly threatened in recent years. Further research on the safety, effectiveness, biological activity, and phytochemical profiling of

the documented plants remains essential. However, a key issue lies in striking the balance between fostering innovation and conserving traditional knowledge, while ensuring that Intellectual Property Rights (IPRs) do not hinder open information exchange or research collaboration. In this sense, complementary strategies including the establishment of collaborative frameworks, the formalization of prior informed consent procedures, and the use of digital platforms for documenting traditional knowledge while safeguarding cultural rights and community interests will be essential.

Declarations

List of abbreviations: Not applicable.

Ethics approval and consent to participate: All the participants were asked for their free prior informed consent before interviews were conducted. An ethics committee approval was not needed for this study and most universities in Africa have no ethics committee. We abided by the ISE Code of Ethics as one of us (AC) is co-chairing the ISE Ethics Committee.

Consent for publication: Not applicable.

Availability of data and materials: Raw data can be requested from the corresponding author.

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

Funding: No funding was received for this research.

Author contributions: PN conceived the study and conducted the interviews. AN and FZ identified the plant species. PN, FA, and AC wrote the manuscript and analyzed the data. SMA, ML, AC, LZ and FA reviewed the manuscript. All authors have read and approved the final manuscript.

Acknowledgements

The authors wish to thank the Traditional Practitioners of the villages of Baskoure, Andemtenga, Koupela, and all family members and friends for their collaboration and support. Thanks to the members of the healers cooperative Laafi–Eco for guiding us during the investigations. We wish to thank Karen Grislis for her help in revising the language.

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