

Diversity and utilization of medicinal plants in Borabue District, Maha Sarakham Province, Northeastern Thailand

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Abstract. *Thipthamrongsap W, Saensouk S, Saensouk P. 2025. Diversity and utilization of medicinal plants in Borabue District, Maha Sarakham Province, Northeastern Thailand. Biodiversitas 26: 3040-3046.* This study provides foundational information for further research and offers conservation status for medicinal plants in Borabue District, Maha Sarakham Province, Northeastern Thailand to ensure continued species richness and sustainable use. The research aimed to document ethnobotanical knowledge and diversity of medicinal plants in two villages, Khok Suea Thao and Khi Lek, Maha Sarakham Province. Ethnobotanical data were interviewed from 30 local informants using semi-structured interviews. A total of 46 medicinal plant species were identified, belonging to 43 genera and 23 families. The Fabaceae family exhibited the highest diversity (9 species), followed by Malvaceae (4 species), while Menispermaceae, Poaceae, and Rubiaceae had three species each. The most frequently used plant part was the roots (27%), followed by leaves (22%), fruits (20%), and stems (14%). Decoction was the most common method of preparation (65%), underscoring the importance of traditional processing techniques. Based on Use Value (UV), the most culturally significant species were *Curcuma longa* (0.93), *Citrus hystrix* (0.90), and *Chromolaena odorata* (0.90). Medicinal plants were used to treat nine ailments across six disease categories, with musculoskeletal disorders showing the highest Informant Agreement Ratio (IAR: 0.97). Of the documented plants, 35 species (61.70%) had a fidelity level of 100%, particularly in treatments focused on restoring and balancing bodily elements. One species, *Xylia xylocarpa* is listed as Vulnerable based on IUCN criteria. This study contributes valuable data for the conservation of traditional knowledge and plant biodiversity. It emphasizes the importance of preserving ethnomedicinal practices, which are at risk of disappearing due to modernization. The findings support the sustainable development of herbal medicine, promote local economic opportunities through value-added local herbal products, and enhance public health initiatives at both local and national levels.

Keywords: Diversity, Maha Sarakham, medicinal plant, Thailand, utilization

INTRODUCTION

Medicinal plants have long been a crucial role in traditional healthcare systems worldwide, particularly in rural and indigenous communities where access to modern medical services is limited. According to the World Health Organization (2013), approximately 80% of the global population relies on the traditional medicine, mainly plant-based remedies as a primary source of healthcare. In Southeast Asia, ethnobotanical knowledge remains a vital component of cultural identity and serve as a valuable foundation for modern pharmaceutical research and drug discovery (Kongkathip et al. 2009; Srithi et al. 2009).

Thailand is recognized as one of the world's biodiversity hotspots, home to a remarkable diversity of medicinal plant species utilized in traditional Thai medicine (Boonma et al. 2024). Among Thailand's regions, the northeastern (Isan) is notable for its rich cultural and botanical heritage. Local communities have developed extensive knowledge of native and naturalized flora through generations of close interaction with their environment and the oral transmission of empirical knowledge (Simaraks et al. 2004; Phumthum and Balslev 2019). However, ongoing socio-economic transformations

such as urbanization, agricultural intensification, and the erosion of traditional practices pose significant threats to the preservation of this valuable knowledge (Phumthum et al. 2020).

Borabue District in Maha Sarakham Province exemplifies a rural setting in Northeastern Thailand where traditional healing practices still coexist with formal healthcare systems. Despite this, there remains a lack of systematic documentation on the diversity and traditional uses of medicinal plants in the district. Gaining a deeper understanding of the medicinal plant species used by local communities, including their traditional preparation methods and their cultural significance, is essential for promoting sustainable utilization, conserving plant biodiversity, and safeguarding intangible cultural heritage.

The study aims to document the diversity of medicinal plants in Borabue District, Maha Sarakham Province, as well as to record their ethnomedicinal uses and traditional preparation methods as practiced by local communities. The findings are intended to support biodiversity conservation efforts and to emphasize the importance of traditional knowledge in enhancing community health resilience and promoting sustainable rural development.

MATERIALS AND METHODS

Study area

The present study was conducted in two villages, Khok Suea Thao and Khi Lek, located in Nong Muang Sub-district, Borabue District, Maha Sarakham Province, in Northeastern Thailand. This area lies within the Korat Plateau, which is characterized by lowland plains, a tropical savanna climate, and sandy loam soils that influence local vegetation patterns and land use (Maxwell 2009; Department of Meteorology 2020). The climate features three distinct seasons: a hot season from March to May, a rainy season from June to October, and the cool season from November to February, with average annual rainfall ranging between 1,200-1,400 mm and temperatures that often exceed 35°C during the summer months (Thai Meteorological Department 2020). Both Khok Suea Thao and Khi Lek Villages are typical of Northeastern Thai agrarian communities, where the economy is predominantly based on seasonal rice cultivation and subsistence agriculture, often supplemented with small-scale animal husbandry, and foraging of wild plants (Simaraks et al. 2004). The surrounding landscape is a mosaic of rice paddies, home gardens, patches of degraded forest, and communal lands that support a rich diversity of plant species used for food, medicine, and cultural practices. These ecological and cultural characteristics make the area particularly suitable for studies on biodiversity and ethnobotany. The selection of these villages was based on their ecological representativeness, accessibility, and the strong presence of traditional ecological knowledge among local inhabitants.

Data collection

Semi-structured interviews were conducted to gather both qualitative and quantitative data on medicinal plants used by residents of the study area (Junsongduang et al. 2020; Phatlampfu et al. 2021). Plant specimens were collected as desiccated samples during fieldwork. Species identification was carried out by comparing morphological characteristics with taxonomic keys and descriptions from relevant botanical publications. The accepted scientific names were verified using Plants of the World Online (2025). A taxonomist assessed the conservation status of each species following IUCN criteria, categorizing them as either common or rare within the study area. Voucher specimens preserved in alcohol were prepared and deposited at the Vascular Plant Herbarium, Mahasarakham University (VMSU), Thailand.

Data analysis

Use Value (UV) is a measure indicating the significance of a plant (Phillips et al. 1994).

$$UV = \sum U_i / N$$

Where U_i is the report of using each species, and N is the total number of informants participating in the study.

Informant Agreement Ratio (IAR) is a measure used to assess the level of agreement or consensus among

informants regarding the use of medicinal plants for specific symptom groups (Trotter and Logan 1986).

$$IAR = (Nur - Nt) / (Nur - 1)$$

Where, Nur is the number of use records in each use category, and Nt is the number of taxa used in each use category.

Fidelity Level (%FL) refers to the percentage of informants who reported the specific use of certain plants for treating particular ailments in the research area (Friedman et al. 1986).

$$\%FL (\%) = NP / N \times 100$$

Where, NP denotes the count of reports of medicinal plant species used for that particular ailment, and N represents the total number of medicinal plant species associated with that ailment.

RESULTS AND DISCUSSION

Species diversity of medicinal plants in Khok Suea Thao and Khi Lek Villages, Nong Muang Sub-district, Borabue District, Maha Sarakham Province

A total of 46 species of medicinal plants were identified, belonging to 43 different genera and 23 families. The Fabaceae family is the most diverse, with nine species, followed by the Malvaceae families, with four species. The Menispermaceae, Poaceae, Rubiaceae families each have 3 species. The Asteraceae, Ebenaceae, Euphorbiaceae, Hypericaceae, Lythraceae, Rutaceae families each have two species. The remaining families, namely Acanthaceae, Annonaceae, Caricaceae, Irvingiaceae, Lamiaceae, Lecythidaceae, Loganiaceae, Rhamnaceae, Rosaceae, Salicaceae, Stemonaceae and Zingiberaceae, are each represented by only one species (Table 1).

Plant parts and preparation used for traditional medicine

The medicinal plants are utilized in different parts of the plant: the root is used 27%, followed by the leaf (22%), the fruit (20%), and the stem (14%). The whole plant is used 6 % times, while both the seed and the bark are each used 4%. Lastly, the rhizome is used 2% (Figure 1).

Table 1. Number of medicinal plants utilized by plant families

Family	Species	Percentage
Fabaceae	9	39
Malvaceae	4	17
Menispermaceae, Poaceae, Rubiaceae	3	13
Asteraceae, Ebenaceae, Euphorbiaceae, Hypericaceae, Lythraceae, Rutaceae	2	9
Acanthaceae, Annonaceae, Caricaceae, Irvingiaceae, Lamiaceae, Lecythidaceae, Loganiaceae, Rhamnaceae, Rosaceae, Salicaceae, Stemonaceae, Zingiberaceae	1	4

Among the various methods of using medicinal plants, decoction is the most common, accounting for 65% of uses, followed by eating fresh (12%), using fresh (10%), pounding (8%), cooking (4%), and grinding with water (2%) (Figure 2).

Use Values (UV)

The three most significant and widely used medicinal plant species were Khamin (*Curcuma longa*; Zingiberaceae), with a Use Value (UV) of 0.93. Followed Makrut (*Citrus hystrix*; Rutaceae) and Sap Suea (*Chromolaena odorata*; Asteraceae), with a Use Value (UV) of 0.90. The details of each medicinal plant are listed (Table 2).

Informant Agreement Ratio (IAR)

The collective knowledge of traditional medicine allowed them to address a total of nine different ailments and symptoms; these were divided among six disorders as classified in (Cook 1995). The disorders treated with the highest degree of consensus were Muscular Skeletal System Disorders with 0.97 of IAR (Table 3).

Fidelity Level (%FL)

Medicinal plants in Nong Muang Sub-district, Borabue District, Maha Sarakham Province, 35 species were found with a %FL value of 100%, accounting for 61.70% of all plants used for disease treatment. It can be observed that the use of medicinal plants for treating diseases is diverse and covers various symptoms. Additionally, plants with the highest %FL value of 100% were primarily used in the category of 'balancing and restoring bodily elements (Table 4).

Threatened species among the medicinal plants

The threatened plants list is based on the IUCN (2025), version 2025, and as per the evaluation criteria set forth by the IUCN website, which are used to determine the conservation status for vulnerable and endangered species. This study found that one species, *Xylia xylocarpa*, is considered Vulnerable on the IUCN Red List, while others do not have a threatened status.

Discussion

Diversity of medicinal plants

Among the numerous plant families used for medicinal purposes, Fabaceae and Malvaceae stood out as the most commonly utilized, as demonstrated by the high number of species. This finding is consistent with previous research conducted in Thailand, which identified Fabaceae as the predominant family used by various ethnic groups for medicinal purposes. For instance, in Northeastern Thailand, the Thai Yoi ethnic groups in Sakon Nakhon Province (Saensouk et al. 2024), Amnat Charoen Province (Junsongduang et al. 2025), and Kalasin Province also favored this family for its medicinal value (Phatlamphu et al. 2021). Likewise, in southern Thailand, Fabaceae was found to be one of the most widely used plant families in traditional healing practices (Junsongduang et al. 2017). The importance of specific plant families in traditional medicine is shaped by a mix of climatic factors, ecological

accessibility, cultural traditions, and the particular health needs of local communities. This highlights how environmental factors and common health concerns influence the medicinal plant choices of local populations.

Parts of plants and preparation used as medicine

In this study, roots were the most commonly utilized part of medicinal plants, aligning with findings from Phatthalung Province, Peninsular Thailand (Maneenoon et al. 2015). However, this result contrasts with the findings of Pholhiamhan et al. (2018), in which leaves were the most frequently used plant parts, and Panyadee et al. (2024), which reported that stems were predominantly used among the Mien people in Thailand and Vietnam. Decoction for oral ingestion is a common medicinal preparation method among Thai rural communities and ethnic groups, as noted by Kantasrila et al. (2024) and Phumthum et al. (2025). Following decoction, the next most common preparation method was consuming fresh plants (Junsongduang et al. 2020), followed by pounding, cooking, and grinding with water.

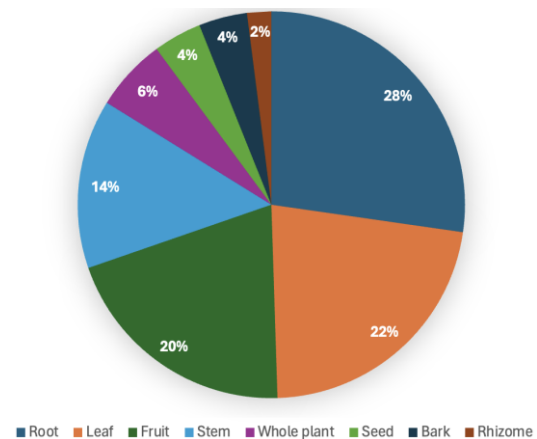


Figure 1. The percentage of plant parts used for medicinal purposes

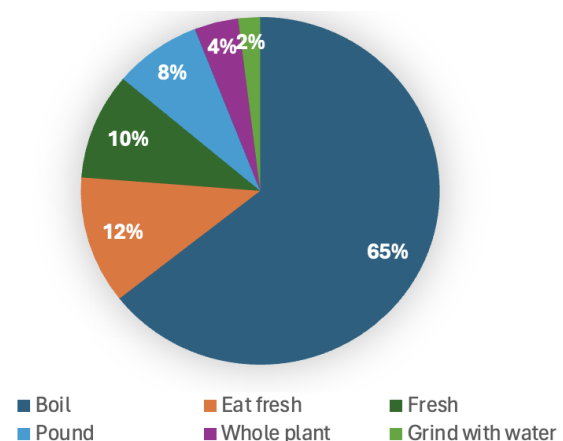


Figure 2. The percentage of preparation methods of medicinal plants

Table 2. Ethnobotanical data of medicinal plants used in the Borabue District, Maha Sarakham Province, Northeastern Thailand

Family name	Specific name	Thai name	Common name	Parts used	Preparation	Ailments treated	No. Voucher
Acanthaceae	<i>Rhinacanthus nasutus</i>	Thong Phan Chang	Snake Jasmine	Whole	Pound	Allergy	VL015
Annonaceae	<i>Polyalthia debilis</i>	Kon Khrok	None	Root	Boil	Fever, heat exhaustion	VL044
Asteraceae	<i>Chromolaena odorata</i>	Sap Suea	Siam Weed, Devil Weed	Leaf	Pound	Hemostasis (stops bleeding)	VL009
	<i>Elephantopus scaber</i>	Do Mai Ru Lom	Elephant's Foot, Prickly-leaved Elephant's Foot	Root Root	Boil Boil	Nourishes the body Nourishes the body	VL032
Caricaceae	<i>Carica papaya</i>	Malakor	Papaya	Fruit	Eat fresh	Aids digestion	VL055
Ebenaceae	<i>Diospyros filipendula</i>	Khan Chong	None	Fruit	Boil	Bloating	VL021
	<i>Diospyros mollis</i>	Maklua	Black Persimmon	Fruit	Eat fresh	Anthelmintic (kills parasites)	VL017
Euphorbiaceae	<i>Croton crassifolius</i>	Phang Khi	None	Stem	Boil	Bloating	VL039
	<i>Jatropha gossypifolia</i>	Sabuu Daeng	Bellyache Bush, Physic Nut	Leaf	Boil Pound	Stomach pain Skin rash	VL060
Fabaceae	<i>Biancaea sappan</i>	Fang Lueat	Sappanwood	Stem	Boil	Internal bruising	VL014
	<i>Caesalpinia pulcherrima</i>	Hang Nok Yuang	Peacock Flower, Barbados Pride	Seed Root	Boil Boil	Kills parasites Menstruation	VL033
	<i>Cassia fistula</i>	Khun	Golden Shower Tree	Root	Boil	Nourishes the body	VL041
	<i>Peltophorum dasyrhachis</i>	Arang	Yellow Poinciana, Copperpod	Fruit	Boil	Expectorant (clears mucus/phlegm)	VL012
	<i>Phyllodium pulchellum</i>	Klet Pla Chon	None	Leaf	Boil	Fever	VL051
	<i>Pterocarpus macrocarpus</i>	Pradu	Burma Padauk, Rosewood	Bark	Boil	Diarrhea, nourishes the body	VL022
	<i>Senna siamea</i>	Khi Lek	Siamese Senna, Kassod Tree	Leaf	Boil	Insomnia	VL028
	<i>Tamarindus indica</i>	Makham	Tamarind	Fruit	Boil	Laxative	VL047
	<i>Xylia xylocarpa</i>	Daeng	Pyinkado, Burma Ironwood	Stem	Boil	Leg pain	VL006
Hypericaceae	<i>Cratogeomys cochinchinensis</i>	Tiew	Yellow Cow Wood	Leaf	Boil	Carminative (relieves gas)	VL050
	<i>Cratogeomys formosum</i>	Tiew Khao	Pink Empat, Softwood	Leaf	Boil	Stomach pain	VL025
Irvingiaceae	<i>Irvingia malayana</i>	Krabok	Wild Mango	Seed	Eat fresh	Kidney tonic	VL042
Lamiaceae	<i>Coleus amboinicus</i>	Hu Suea	Indian Borage, Cuban Oregano	Leaf	Eat fresh	Cold	VL003
Lecythidaceae	<i>Careya arborea</i>	Krathon	Wild Guava, Slow Match Tree	Leaf	Eat fresh	Stomach pain, diarrhea	VL040
Loganiaceae	<i>Strychnos nux-blanda</i>	Salaeng Chai	None	Root	Boil	Malaria	VL018
Lythraceae	<i>Lagerstroemia speciosa</i>	Inthanon	Queen's Crape Myrtle, Giant Crape Myrtle	Root	Boil	Mouth ulcers	VL036
	<i>Lagerstroemia floribunda</i>	Pueai	Thai Crape Myrtle, Pink Crape Myrtle	Bark	Boil	Stomach pain	VL046
Malvaceae	<i>Gossypium herbaceum</i>	Fai	Levant Cotton, Short-staple Cotton	Fruit	Boil	Gonorrhea	VL019
	<i>Helicteres angustifolia</i>	Po Khi Tun	None	Root Stem	Boil Boil	Cold Heat exhaustion	VL016
	<i>Mansonia gagei</i>	Chan Hom	None	Stem Stem	Boil Boil	Fever Carminative (relieves gas)	VL029
	<i>Microcos paniculata</i>	Lom Khom	Small-leaved Limeberry	Fruit	Boil	Postpartum tonic	VL038
Menispermaceae	<i>Cissampelos pareira</i>	Khreua Ma Noi	Velvetleaf, Abuta	Leaf	Cook	Heat exhaustion	VL054
	<i>Tiliacora triandra</i>	Ya Nang	Bai Yanang	Leaf	Cook	Heat exhaustion	VL035
	<i>Tinospora cordifolia</i>	Boraphet	Heart-leaved Moonseed, Guduchi	Root Stem	Fresh Boil	Bloating Allergy	VL049
Poaceae	<i>Vietnamosasa pusilla</i>	Phai Phek	None	Root	Boil	Joint pain	VL011
	<i>Cyperus rotundus</i>	Ya Haeo Mu	Nut Grass, Purple Nutsedge	Whole plant	Boil	Kidney stones, diuretic	VL008
	<i>Imperata cylindrica</i>	Ya Kha	Cogon Grass, Blady Grass	Whole plant	Boil	Diabetes	VL052
Rhamnaceae	<i>Ziziphus oenopolia</i>	Lep Yiao	Small-fruited Jujube	Root	Boil	Hypertension	VL027
Rosaceae	<i>Malus indica</i>	Mak Khi Nu	Indian Crab Apple	Fruit	Boil	Nourishes the body	VL031
Rubiaceae	<i>Canthium berberidifolium</i>	Ngieng Duk	None	Root	Grind with water	Allergy Tuberculosis	VL024
	<i>Morinda citrifolia</i>	Yo	Noni, Indian Mulberry	Fruit	Boil	Dizziness, nausea	VL056
	<i>Oxyceros horridus</i>	Khat Khao	None	Root	Boil	Gonorrhea	VL010
Rutaceae	<i>Aegle marmelos</i>	Tum	Bael, Wood Apple	Fruit	Boil	Nourishes the body	VL053
	<i>Citrus hystrix</i>	Makrut	Kaffir Lime, Makrut Lime	Fruit	Fresh	Dandruff	VL048
Salicaceae	<i>Flacourtia indica</i>	Takob Pa	Governor's Plum	Fruit	Boil	Diarrhea	VL023
Stemonaceae	<i>Stemona tuberosa</i>	Non-Tai Yak	None	Stem	Boil	Anthelmintic (kills parasites)	VL034
Zingiberaceae	<i>Curcuma longa</i>	Khamin Chan	Turmeric	Rhizome Leaf	Fresh Fresh	Allergy Bloating	VL026

Table 3. Disorders treated and the Informant Agreement Ratio (IAR)

Categories symptoms	Nur	Nt	IAR
Muscular skeletal system disorders	30	2	0.97
Obstetrics and gynecology disorders	27	2	0.96
Skin/subcutaneous cellular tissue disorders	115	6	0.96
Genitourinary system disorders	41	3	0.95
Circulatory system disorders	82	5	0.95
Relieving heat symptoms	127	8	0.94
Nourishes	108	7	0.94
Respiratory system disorders	52	4	0.94
Digestive system disorders	295	21	0.93

Table 4. Fidelity Level (%FL)

Categories symptoms	Species	%FL	
Circulatory System Disorders	<i>Biancaea sappan</i>	100%	
	<i>Chromolaena odorata</i>	55%	
Digestive System Disorders	<i>Lagerstroemia speciosa</i>	100%	
	<i>Imperata cylindrica</i>	50%	
	<i>Caesalpinia pulcherrima</i>	50%	
	<i>Careya arborea</i>	50%	
	<i>Carica papaya</i>	100%	
	<i>Cratoxylum cochinchinense</i>	100%	
	<i>Cratoxylum formosum</i>	100%	
	<i>Croton crassifolius</i>	100%	
	<i>Curcuma longa</i>	47%	
	<i>Cyperus rotundus</i>	54%	
	<i>Diospyros filipendula</i>	100%	
	<i>Diospyros mollis</i>	100%	
	<i>Flacourtia indica</i>	100%	
	<i>Irvingia malayana</i>	100%	
	<i>Jatropha gossypifolia</i>	55%	
	<i>Lagerstroemia floribunda</i>	100%	
	<i>Mansonia gagei</i>	50%	
<i>Morinda citrifolia</i>	100%		
<i>Pterocarpus macrocarpus</i>	50%		
<i>Stemona tuberosa</i>	100%		
<i>Tamarindus indica</i>	100%		
<i>Tiliacora triandra</i>	43%		
Genitourinary System Disorders	<i>Cyperus rotundus</i>	46%	
	<i>Gossypium herbaceum</i>	100%	
Muscular Skeletal System Disorders	<i>Oxyceros horridus</i>	100%	
	<i>Vietnamosasa pusilla</i>	100%	
Nourishes	<i>Xylia xylocarpa</i>	100%	
	<i>Aegle marmelos</i>	100%	
Obstetrics and Gynecology Disorders	<i>Cassia fistula</i>	100%	
	<i>Chromolaena odorata</i>	45%	
	<i>Elephantopus scaber</i>	100%	
	<i>Pterocarpus macrocarpus</i>	100%	
	<i>Senna siamea</i>	100%	
	<i>Ziziphus oenopolia</i>	100%	
	<i>Caesalpinia pulcherrima</i>	50%	
	<i>Microcos paniculata</i>	100%	
	Relieving Heat Symptoms	<i>Cissampelos pareira</i>	100%
		<i>Helicteres angustifolia</i>	50%
<i>Mansonia gagei</i>		50%	
<i>Phyllodium pulchellum</i>		100%	
<i>Polyalthia debilis</i>		50%	
<i>Polyalthia debilis</i>		50%	
<i>Strychnos nux-blanda</i>	100%		
<i>Tiliacora triandra</i>	100%		

Respiratory System Disorders	<i>Canthium berberidifolium</i>	100%
	<i>Coleus amboinicus</i>	100%
	<i>Helicteres angustifolia</i>	50%
	<i>Peltophorum dasyrhachis</i>	100%
Skin/Subcutaneous Cellular Tissue Disorders	<i>Citrus hystrix</i>	100%
	<i>Curcuma longa</i>	53%
	<i>Jatropha gossypifolia</i>	45%
	<i>Malus indica</i>	100%
	<i>Rhinacanthus nasutus</i>	100%
	<i>Tinospora cordifolia</i>	100%

Use Values (UV)

The use value serves as a quantitative measure of the relative significance of species. The most significant and widely used medicinal plant species in Nong Muang Sub-district, Borabue District, Maha Sarakham Province was Khamin (*C. longa*; Zingiberaceae). This study found that it was used in two classification categories: allergy and bloating. The use of this plant was reported in all the studied villages and by most informants (90%). It is well known for its medicinal properties in treating allergies and bloating, not only in Maha Sarakham Province but also among various ethnic groups and provinces, including Mae Hong Son Province (Inta et al. 2023), Northern Thailand, Chiang Mai Province (Panyadee 2019), and the Phu Thai ethnic group in Nakhon Phanom Province (Pholhiamhan et al. 2018; Ragsasilp et al. 2022). This finding aligns with numerous reports on the medicinal potential of turmeric (*C. longa*), a key component of Ayurvedic medicine for centuries. It is valued for both its medicinal and dietary uses. The main active compound in turmeric, curcumin appearing as a yellow granule, has been extensively researched and proven to be non-toxic to humans (Ayati et al. 2019; Papayrata et al. 2024). It is widely recognized for its antioxidant, anti-inflammatory, antiviral, and antifungal properties (Rahaman et al. 2021).

Informant Agreement Ratio (IAR) and Fidelity Level (%FL)

The Informant Agreement Ratio (IAR) was used to evaluate the homogeneity or consensus of knowledge among the information provided. In our findings, musculoskeletal system disorders and obstetrics-related conditions had the highest IAR values among all treated disorders. The high IAR value for the treatment of musculoskeletal system disorders may be due to the fact that local people live in rural areas, where their daily livelihood primarily involves manual labor, which is often physically demanding. Combined with the long-term hot climate, this results in a high prevalence of musculoskeletal and skin diseases. However, a study on the Karen ethnic group (Phumthum et al. 2020) found that the highest IAR values were for musculoskeletal and skin disorders. Among the Phu Thai ethnic group in Nakhon Phanom Province (Ragsasilp et al. 2022), the highest IAR values were observed for injuries, blood system disorders, circulatory system disorders, and pregnancy/birth/puerperium disorders.

The analysis of Fidelity Level (%FL) provides valuable insight into the consistency and reliability of medicinal plant use within a community. The finding that 35 species had a 100% FL, making up 61.70% of all medicinal plants

used, suggests a strong consensus on their efficacy for specific ailments. This high-fidelity level reflects the community's shared traditional knowledge and confidence in these plants' medicinal properties. The dominance of the Nourishment group with 100% FL highlights the emphasis on preventive healthcare rather than just curative treatments. This suggests that the local population integrates herbal medicine into their daily well-being practices, possibly to maintain internal balance and prevent illness. On the other hand, the presence of 22 species with FL lower than 100% indicates versatility in plant use across different symptom groups. This variability may arise from broader therapeutic applications, cultural differences in treatment approaches, or the adaptability of medicinal knowledge within the community. Such plants may require further research to determine whether their multiple uses are supported by distinct active compounds or whether they serve general health-enhancing functions. The high FL values observed for select species underscore their importance in traditional medicine and suggest that these plants warrant further scientific investigation. Future studies should focus on their phytochemical composition, pharmacological properties, and potential bioactive compounds to validate their traditional use and explore new therapeutic applications. Additionally, studying variability in FL across different communities could provide deeper insights into how medicinal plant knowledge evolves and adapts over time.

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