

Medicinal Plant Use by Traditional Healers in the Muaro Jambi Temple Complex

Helman Kurniadi^{1*}, Aminuddin², Fitria Heldiana³

¹Pharmacist Professional Program; ²Department of Pharmacy, Universitas Adiwangsa Jambi, Indonesia.

³UPT Puskesmas Enok, Indragiri Hilir, Indonesia.

Corresponding author*

helmankurniadi@gmail.com

Manuscript received: 24 November, 2025. Revision accepted: 10 March 2026, Published: 08 April, 2026.

Abstract

Traditional medicinal knowledge plays an essential role in community health practices, yet much of it remains undocumented and at risk of being lost. This study investigated the ethnobotanical knowledge of traditional healers in the cultural landscape surrounding Candi Muaro Jambi, Indonesia. From April to July 2025, interviews were conducted with seven key informants recognized for their expertise in traditional healing. Information on plant names, parts used, preparation methods, routes of application, and treated ailments was collected and verified through botanical identification. A total of 98 medicinal plant species were documented, with leaves most frequently used (45.9%), followed by fruits, stems, seeds, bark, or latex (30.6%), and roots, rhizomes, or tubers (23.5%). Boiling was the predominant preparation method, valued for its simplicity and effectiveness in extracting water-soluble compounds. The recorded remedies addressed a wide spectrum of health conditions, including infections, inflammatory diseases, metabolic disorders, and respiratory problems, applied both orally and topically. These findings highlight the cultural importance and pharmacological potential of local ethnomedicinal practices, providing a valuable foundation for future drug discovery and biodiversity conservation.

Keywords: Ethnobotanical study; Muaro Jambi temple; Natural products; Traditional medicine.

INTRODUCTION

Indonesia is widely recognized as one of the world's megadiverse countries, hosting an exceptional range of plant species that contributes significantly to global biodiversity. Current estimates indicate that the country contains around 30,466 vascular plant species across 2,968 genera and 317 families, accounting for approximately 8.7% of all known plant species worldwide (Sun et al., 2024). Among the major islands, Sumatra stands out with the highest documented plant richness, comprising 10,902 species. This ecological wealth positions the island as an important region for both biodiversity conservation and scientific investigation.

Globally, an estimated 50,000 to 80,000 flowering plant species are used for medicinal purposes. However, nearly 15,000 of these are considered threatened due to overharvesting, habitat degradation, shifts in land use, and limited conservation measures (Chen et al., 2016). These pressures underscore the need for systematic documentation and preservation of medicinal plant knowledge, particularly in regions where traditional practices remain integral to community health.

In Indonesia, traditional medicinal knowledge continues to shape local healthcare systems and carries

strong cultural value. One area where this heritage is especially visible is the Muaro Jambi Temple Complex, the largest archaeological temple site in Southeast Asia. Beyond its historical significance, the complex serves as a refuge for numerous medicinal plant species still used by traditional healers (Hapid et al, 2023). Earlier studies have recorded at least 65 species utilized for medicinal and ritual purposes in the area (Susanti et al, 2020). Additional surveys around Candi Koto Mahligai reported 246 individual trees representing 26 species, consisting of both endemic and introduced taxa (Zulkarnaen et al., 2025). The presence of these species supports the view that Muaro Jambi historically functioned as a center of trade, cultural exchange, and knowledge transfer, particularly in relation to medicinal plant use (Bonatz et al., 2009).

Despite its ecological and cultural importance, ethnobotanical documentation from the Muaro Jambi region remains scarce. Much of the knowledge held by traditional healers is orally transmitted and increasingly vulnerable to loss as younger generations shift toward modern healthcare systems. Comprehensive documentation is therefore crucial not only for preserving local knowledge but also for supporting conservation efforts and informing future pharmacological studies. Findings from ethnobotanical

research conducted in other regions of Indonesia including Kalimantan, Papua, Sulawesi, Java, and Sumatra, demonstrate the remarkable diversity and cultural significance of medicinal plant use across the archipelago (Sutomo et al, 2024; Budiarti et al, 2020; Tamin et al, 2019; Nurcahyo et al, 2024; Hapid et al, 2023; Susanti et al, 2020). At the same time, these studies reveal notable gaps, particularly in areas such as Muaro Jambi that have not been explored in depth.

To address this gap, the present study aimed to systematically document the medicinal plant species utilized by traditional healers in the Muaro Jambi Temple Complex. Specifically, the study identifies the plant parts used, preparation techniques, and therapeutic indications recognized by local practitioners. The resulting dataset is expected to contribute to the preservation of traditional knowledge, support conservation strategies, and inform the development of evidence-based traditional medicine grounded in Indonesia's rich biological and cultural heritage.

MATERIALS AND METHODS

Study area

This study was conducted in Muaro Jambi Village, located in the cultural landscape surrounding the Muaro Jambi Temple Complex, Jambi Province, Indonesia. Ethnobotanical data were collected from April to July 2025 through interviews with key informants recognized for their traditional healing expertise. The study area is characterized by mixed home gardens, secondary forest patches, and agroforestry systems that support a high diversity of useful medicinal plants.

Procedures

Selection of Informants

Informants were selected using purposive sampling. Inclusion criteria were: (1) actively practicing traditional medicine for at least two years, and (2) frequently consulted by the community for village-level healing practices. A total of seven informants met these criteria. All interviews were conducted in the presence of a certified herbalist (BNSP) to ensure accuracy and proper interpretation of local medicinal knowledge.

Data Collection

Data were gathered through semi-structured and open-ended interviews focusing on local plant names, parts used, preparation methods, administration routes, and perceived therapeutic indications. Plant identification was carried out through a two-step approach: first, informants described and pointed out the plants used; second, the researcher verified these descriptions using photographic evidence taken at the interview site. Identification was cross-checked using authoritative botanical databases (The Plant List and Catalogue of Life). In accordance with ethical standards, informed

consent was obtained from all participants. Ethical approval for the study was granted by the Ethics Committee of Universitas Yarsi (No. 128/KEP-UY/EA.10/IV/2025).

Data analysis

Interview data were transcribed and organized into structured tables. Medicinal plant species were classified into three functional groups based on plant parts used: (1) leaves, (2) underground organs such as roots, rhizomes, and tubers, and (3) stems, bark, fruits, seeds, and exudates. Descriptive analysis was applied to summarize frequencies of plant use, dominant preparation methods, and the distribution of plant parts within the dataset. No quantitative ethnobotanical indices were calculated; the analysis focused on interpreting usage patterns based on informant narratives.

RESULTS AND DISCUSSION

An ethnobotanical review of 45 medicinal plant species that primarily use leaves (Table 1) shows that leaves are the most frequently employed plant part, representing 45.9% of the 98 species documented. This preference is consistent with reports from Southeast Asia, where leaves are abundant, easy to harvest, and rich in secondary metabolites (Jafri et al, 2023). Leaves are suitable for both oral and topical use due to ease of processing and absorption of bioactive compounds (Konrad et al, 2025).

Decoction was the dominant preparation method, applied to 64.4% of leaf species, particularly for oral consumption, effectively extracting flavonoids, saponins, and tannins with antioxidant, anti-inflammatory, and antimicrobial effect (Bolat et al, 2024). Topical applications through pounding or squeezing were also common for treating wounds, inflammation, and muscle pain (Coutinho et al, 2021). Drying and distillation were less frequent but serve for preservation and essential oil production (Bugarcic et al, 2025). Traditional remedies are generally consumed one to two times daily, reflecting cautious dosing practices (Kwon et al, 2024).

Medicinally, leaf-based plants target inflammatory, infectious, and metabolic disorders. Examples include *Crinum asiaticum* for rheumatism and skin disorders, *Andrographis paniculata* for diabetes, and *Senna alata* for fungal skin infections (Rajanna et al, 2021; Oladeji et al, 2020). *Vernonia amygdalina* and *Psidium guajava* show antidiabetic and antidiarrheal effects, while *Moringa oleifera*, *Syzygium polyanthum*, and *Catharanthus roseus* exhibit antihypertensive and multifunctional pharmacological activities (Liu et al, 2024). Topical uses include *Aloe vera* for burns and *Uncaria gambir* for oral and skin disorders. Dual-use plants such as *Anredera cordifolia* illustrate community knowledge of pharmacological versatility (Caballero et al, 2019). Among 23 medicinal plant species used by

local communities, rhizomes were the most frequently (21.7 percent) and roots (13 percent) utilized plant part (65.2 percent), followed by tubers

Table 1. Traditional Medicinal Plants Using Leaves.

No	Local Name	Scientific Name	Part Used	Preparation Method	Indication (Local/Academic)
1	Bakueng / Bakung Putih	<i>Crinum asiaticum</i>	Leaf	Heated, squeezed, and applied to the affected area twice daily	Reumatik (Rheumatism); Bisul (Boils); Alergi kulit (Cutaneous hypersensitivity)
2	Benalu	<i>Loranthus sp.</i>	Leaf	Boiled for oral consumption; squeezed for external use	Sakit perut (Abdominal pain); Kulit (Skin disorders)
3	Binahong	<i>Anredera cordifolia</i>	Leaf	Boiled for oral use; pounded and applied to the affected area	Luka luar (External wounds); Hipertensi (Hypertension)
4	Bungo Rayo / Kembang Sepatu	<i>Hibiscus rosa-sinensis</i>	Leaf	Squeezed/crushed and applied topically twice daily	Demam (Fever)
5	Dandang Gendis	<i>Clinacanthus nutans</i>	Leaf	Boiled for drinking; pounded and applied	Gigitan binatang (Animal bite injury); Bengkak (Localized edema)
6	Daun Afrika	<i>Vernonia amygdalina</i>	Leaf	Boiled/infused, water consumed 1–2 times daily	Diabetes (Diabetes mellitus); Pembersih darah (Blood purification)
7	Daun Sendok	<i>Plantago major</i>	Leaf	Pounded for topical application; boiled for oral use	Bisul (Boils); Luka (Wounds)
8	Daun Wungu	<i>Graptophyllum pictum</i>	Leaf	Pounded for external use; boiled for drinking	Ambeien (Hemorrhoids); Bengkak (Localized edema)
9	Durian	<i>Durio zibethinus</i>	Leaf	Squeezed, applied topically, and bandaged	Cantengan (Onychocryptosis)
10	Gambir	<i>Uncaria gambir</i>	Leaf	Dried/extracted, liquid consumed	Sariawan (Aphthous stomatitis); Mencret (Acute diarrhea)
11	Gandarus	<i>Justicia gendarussa</i>	Leaf	Boiled, decoction consumed	Reumatik (Rheumatic diseases); Nyeri otot (Myalgia)
12	Gandarus Putih	<i>Justicia gendarussa var. alba</i>	Leaf	Boiled, decoction taken orally	Encok (Lumbago); Bengkak sendi (Joint swelling)
13	Genjer	<i>Limncharis flava</i>	Leaf	Boiled/cooked, consumed with water	Pelancar kencing (Diuretic effect)
14	Inay Ayam / Pacar Air	<i>Impatiens balsamina</i>	Leaf	Ground, applied to skin, and bandaged	Kuku sakit (Onychitis)
15	Inay Kayu / Pacar Kuku	<i>Lawsonia inermis</i>	Leaf	Crushed, applied, and wrapped	Luka (Wounds); Infeksi kulit (Skin infections)
16	Jambu Biji	<i>Psidium guajava</i>	Leaf	Squeezed, juice consumed 2–3 times daily	Diare (Acute diarrhea)
17	Jamur Kambing	<i>Hyptis pectinate</i>	Leaf	Crushed, applied to wounds, and wrapped	Luka (Wounds)
18	Jarak	<i>Ricinus communis</i>	Leaf	Squeezed and applied to the abdomen/head twice daily	Sakit perut (Abdominal pain); Demam (Fever)
19	Jati Belanda	<i>Guazuma ulmifolia</i>	Leaf	Dried/boiled, decoction taken twice daily	Pelangsing (Weight management); Hipertensi (Hypertension)
20	Kayu Putih Hutan	<i>Melaleuca leucadendra</i>	Leaf	Distilled into oil, applied to the painful area	Pegal-pegal (Myalgia); Minyak gosok (Topical analgesic use)
21	Kelor	<i>Moringa oleifera</i>	Leaf	Boiled for drinking; cooked as a vegetable	Hipertensi (Hypertension); Tambah ASI (Galactagogue)
22	Kemangi	<i>Ocimum sanctum / O. basilicum</i>	Leaf	Eaten raw or boiled, decoction consumed	Masuk angin (Common cold); Cegah bau badan (Bromhidrosis prevention)
23	Kledek / Ubi Jalar	<i>Ipomoea batatas</i>	Leaf	Squeezed, applied to boils, and wrapped	Bisul (Boils)
24	Kumis Kucing	<i>Orthosiphon aristatus</i>	Leaf	Boiled, water taken orally twice daily	Lancar kencing (Diuretic effect); Bengkak ginjal (Renal edema)
25	Kupang / Ketepeng	<i>Senna alata</i>	Leaf	Squeezed and applied twice daily	Panu (Tinea versicolor); Gatal (Pruritus); Kurap (Dermatophytosis)
26	Kutu Babi / Senduduk Bulu	<i>Clidemia hirta</i>	Leaf	Crushed and applied three times daily	Luka (Wounds)
27	Lidah Buaya	<i>Aloe vera</i>	Leaf	Gel applied directly or taken orally	Luka bakar (Burns); Konstipasi (Constipation)
28	Luntas / Beluntas	<i>Pluchea indica</i>	Leaf	Consumed as fresh vegetables or cooked	Bau keringat (Bromhidrosis)

No	Local Name	Scientific Name	Part Used	Preparation Method	Indication (Local/Academic)
29	Pepaya	<i>Carica papaya</i>	Leaf	Boiled or squeezed, decoction taken once daily	Cacingan (Helminthiasis); Gangguan pencernaan (Gastrointestinal disorders); Gangguan nafsu makan (Appetite loss)
30	Puding Merah	<i>Mentha pulegium</i>	Leaf	Heated and applied to the body	Patah kaki (Bone fracture)
31	Rambutan	<i>Nephelium lappaceum</i>	Leaf	Squeezed and applied every 2–3 days	Panas (Febrile condition)
32	Salam	<i>Syzygium polyanthum</i>	Leaf	Boiled in 3 glasses of water, decoction taken once daily	Kolesterol (Hypercholesterolemia); Hipertensi (Hypertension)
33	Sambiloto	<i>Andrographis paniculata</i>	Leaf	Boiled in 2 glasses of water, decoction taken once daily	Diabetes (Diabetes mellitus)
34	Sambung Nyawa	<i>Gynura procumbens</i>	Leaf	Boiled in 2 glasses of water, decoction taken twice daily	Demam (Fever)
35	Sembung	<i>Blumea balsamifera</i>	Leaf	Boiled, water taken orally twice a day	Masuk angin (Common cold); Perut kembung (Flatulence)
36	Sendingin / Setawar Padang	<i>Kalanchoe pinnata</i>	Leaf	Pounded and applied to the painful area	Sakit dada (Chest pain); Sakit kepala (Headache)
37	Senduduk Putih	<i>Melastoma malabathricum var. alba</i>	Leaf	Boiled, decoction consumed or used as a compress	Demam (Fever); Luka benturan (Contusion)
38	Serai Wangi	<i>Cymbopogon nardus</i>	Leaf	Boiled for drinking; distillate applied 1–2 times daily	Gigitan nyamuk (Mosquito bite irritation); Masuk angin (Common cold)
39	Sirih	<i>Piper betle</i>	Leaf	Boiled for oral use; also chewed directly	Bau mulut (Halitosis); Luka (Wounds)
40	Sirih Merah	<i>Piper ornatum</i>	Leaf	Chewed/squeezed, juice taken 1–2 times daily	Sakit gigi (Toothache); Pencernaan (Gastrointestinal disorders)
41	Sirsak	<i>Annona muricata</i>	Leaf	Boiled, water consumed 1–2 times per day	Kanker (Neoplasms); Hipertensi (Hypertension)
42	Sisik Nago	<i>Polypodiaceae sp.</i>	Leaf	Boiled with 3 glasses of water, decoction consumed once daily	Reumatik (Rheumatic diseases)
43	Sungkai	<i>Peronema canescens</i>	Leaf	Boiled with 3 glasses of water, decoction consumed twice daily	Malaria (Malaria)
44	Tapak Dara	<i>Catharanthus roseus</i>	Leaf	Dried/boiled, decoction consumed as needed	Diabetes (Diabetes mellitus); Hipertensi (Hypertension)
45	Tapak Kuda	<i>Ipomoea pes-caprae</i>	Leaf	Pounded for topical use; boiled for oral use	Gigitan ulat laut (Marine caterpillar envenomation); Sakit kulit (Skin disorders)

The dominance of rhizomes, particularly from Zingiberaceae species such as *Zingiber officinale*, *Kaempferia galanga*, *Boesenbergia rotunda*, and *Alpinia galanga*, reflects their richness in bioactive compounds like gingerol, zerumbone, kaempferol, and flavonoids, known for anti-inflammatory, antioxidant, and analgesic properties (Periferakis et al, 2023).

Decoction was the main preparation method, applied to 95.7 percent of species, while crushing, roasting, and grating were less common. This method efficiently extracts water-soluble active constituents and is simple and safe, explaining its widespread use (Hop and Son, 2023). Common therapeutic uses include respiratory ailments, musculoskeletal complaints, digestive issues, fatigue, and women's health. For example, *Zingiber cassumunar* is applied orally and topically for inflammation and pain, while *Imperata cylindrica* roots are decocted for diuretic and anti-inflammatory effects

(Gundom et al, 2025). Ginger and galangal alleviate cold and muscle soreness, with their pharmacological activity supported by gingerol and galangin (Periferakis et al, 2023). Fatigue is treated with *Talinum paniculatum*, *Eurycoma longifolia*, and *Zingiber aromaticum*, and menstrual pain is addressed using *Costus speciosus* and *Curcuma aeruginosa* (Jitpromma et al, 2025).

Several species also demonstrate dual routes of administration. *Kaempferia galanga*, for instance, is traditionally consumed as an oral decoction and applied topically for skin-related conditions, illustrating local adaptation and an understanding of its pharmacological versatility. Traditional pharmacopeias describe oral preparations using approximately 6–9 g of dried rhizome per dose, while topical applications commonly involve fresh mashed rhizomes or pastes (Wang et al., 2021; Kumar, 2020).

Table 2. Traditional Medicinal Plants Utilizing Root/Rhizome/Tuber.

No	Local Name	Scientific Name	Part Used	Preparation Method	Indication (Local / Academic)
1	Alang-alang	<i>Imperata cylindrica</i>	Root	Boiled and the decoction is taken twice daily	Panas (Fever); Anyang-anyangan (Dysuria)
2	Bangle	<i>Zingiber cassumunar</i>	Rhizome	Grated, roasted, or boiled; used both orally and topically 1–2 times daily	Masuk angin (Common cold); Rematik (Rheumatism)
3	Bawang Merah	<i>Allium cepa</i>	Tuber	Crushed or roasted, then applied to the affected area 1–2 times daily	Demam (Fever); Masuk angin (Common cold)
4	Bawang Putih	<i>Allium sativum</i>	Tuber	Consumed raw or boiled; the water and tuber are ingested 1–2 times daily	Cacingan (Intestinal worms); Lemah (Fatigue)
5	Cekur	<i>Kaempferia galanga</i>	Rhizome	Crushed or boiled, then either consumed or applied topically 1–2 times daily	Masuk angin (Common cold); Perut kembung (Bloating)
6	Gandasuli	<i>Hedychium coronarium</i>	Rhizome	Boiled and the decoction is consumed 1–2 times daily	Batuk (Cough); Sesak dada (Chest tightness)
7	Ginseng Jawa	<i>Talinum paniculatum</i>	Root	Crushed or boiled, and the decoction is taken orally	Lelah (Fatigue); Stamina (Stamina enhancement)
8	Ilalang Merah	<i>Imperata cylindrica var. rubra</i>	Root	Boiled and the decoction is consumed twice daily	Demam (Fever); Cegah panas dalam (Prevention of internal heat)
9	Jahe	<i>Zingiber officinale</i>	Rhizome	Bruised or boiled, and the decoction is consumed 2–3 times daily	Masuk angin (Common cold); Pegal (Muscle aches)
10	Kencur Hitam	<i>Kaempferia nigra</i>	Rhizome	Crushed or boiled, and the decoction is taken once daily	Reumatik (Rheumatism); Stamina (Stamina enhancement)
11	Kunyit	<i>Curcuma longa</i>	Rhizome	Grated or boiled, and the decoction is consumed twice daily	Masuk angin (Common cold); Bersih rahim (Uterine cleansing)
12	Lemba	<i>Costus speciosus</i>	Rhizome, Stem	Crushed or boiled, and the decoction is consumed once daily	Nyeri haid (Dysmenorrhea); Lemah badan (Fatigue)
13	Lempuyang	<i>Zingiber zerumbet</i>	Rhizome	Boiled and the decoction is consumed once daily	Nyeri (Pain); Nyeri sendi (Joint pain)
14	Lempuyang Wangi	<i>Zingiber aromaticum</i>	Rhizome	Boiled and the decoction is consumed twice daily	Tenaga (Energy booster); Penghangat (Warming tonic)
15	Lengkuas	<i>Alpinia galanga</i>	Rhizome	Grated or boiled, and the decoction is consumed twice daily	Masuk angin (Common cold); Rematik (Rheumatism)
16	Putri Malu	<i>Mimosa pudica</i>	Root	Boiled for oral use; crushed and applied topically	Luka luar (External wounds); Nyeri haid (Dysmenorrhea)
17	Rotan	<i>Calamus</i> spp.	Root	Boiled and the decoction is consumed once daily	Pegal linu (Muscle soreness); Lelah (Fatigue)
18	Talas	<i>Colocasia esculenta</i>	Tuber	Boiled or steamed and consumed	Lemah badan (Fatigue)
19	Tapak Tuan / Pasak Bumi	<i>Eurycoma longifolia</i>	Root	Prepared as powder or decoction, and taken once daily	Tenaga (Energy booster); Vitalitas pria (Male vitality)
20	Temu Hitam	<i>Curcuma aeruginosa</i>	Rhizome	Dried or boiled, and the decoction is consumed 1–2 times daily	Obat wanita (Women's health tonic); Lancar haid (Menstrual regulation)
21	Temu Kunci	<i>Boesenbergia rotunda</i>	Rhizome	Used fresh or boiled, and the decoction is taken 1–2 times daily	Gangguan nafsu makan (Loss of appetite); Masuk angin (Common cold)
22	Temu Lawak	<i>Curcuma xanthorrhiza</i>	Rhizome	Made into powder or boiled, and consumed twice daily	Kuning (Jaundice); Sakit lambung (Gastritis); Masuk angin (Common cold)
23	Temu Putih	<i>Curcuma zedoaria</i>	Rhizome	Grated or boiled, and the decoction is taken 1–2 times daily	Tumor (Tumor); Racun perut (Stomach poisoning)

A total of 30 plant species were recorded for their use of fruits, stems, seeds, bark, and latex. Fruits were the most commonly used single part, representing 36.7 percent of species, followed by combinations of plant parts (30 percent) and leaves with petioles (10 percent). Fruits are rich in phenolics, tannins, and water-soluble polysaccharides, providing antioxidant, antimicrobial, and immunomodulatory effects (Patra et al., 2022).

Decoction was the predominant preparation method, applied to 83 percent of species, effectively extracting hydrophilic bioactive compounds such as flavonoids, lignans, tannins, and glycosides with hepatoprotective, antimicrobial, and antioxidant activities (Dhawan and Olweny, 2020). Other methods, including grating, infusion, and latex application, complemented these treatments.

Notable species include *Phyllanthus niruri*, traditionally used for malaria, liver protection, and diuretic purposes, supported by compounds such as phyllanthin and hypophyllanthin²⁶. *Tinospora crispa* stems are decocted for anti-inflammatory, antidiabetic, and antimalarial effects, containing tinoscroside A and borapetoside A (Zuhri et al, 2022). *Hippobroma longiflora* latex is applied topically for ocular conditions, reflecting unique local adaptation (Imelda et al, 2023).

Dual oral and topical uses were observed in species such as *Averrhoa bilimbi*, highlighting community strategies to address both systemic and localized health issues (Wahyuni and Sari, 2021). Other species, such as *Ziziphus mauritiana* and *Muntingia calabura*, are consumed as fruits or decoctions to support antioxidant and immunostimulatory effects (Siagian et al, 2025).

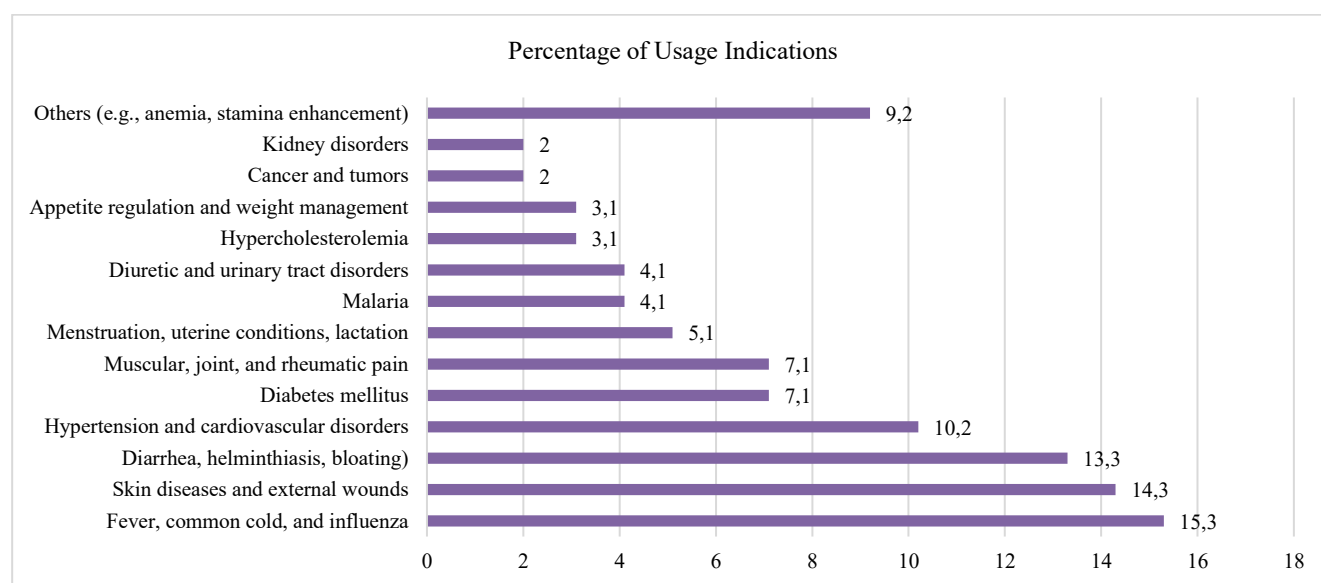
Table 3. Traditional Medicinal Plants Utilizing Root/Rhizome/Tuber

No	Local Name	Scientific Name	Part Used	Preparation Method	Indication (Local/Academic)
1	Ambin Buah / Meniran	<i>Phyllanthus niruri</i>	Fruit, Stem, Leaf, Root	Boiled and the decoction is taken orally 1–2 times daily	Malaria (Malaria)
2	Babal / Nangka Muda	<i>Artocarpus heterophyllus</i>	Seed	Grated, filtered, and the juice is consumed orally twice daily	Diare (Diarrhea)
3	Beligo / Kundur	<i>Benincasa hispida</i>	Fruit	Boiled and the decoction is consumed 1–2 times daily	Demam (Fever)
4	Belimbing Wuluh	<i>Averrhoa bilimbi</i>	Fruit, Leaf	Pounded and applied topically; boiled and taken orally 1–2 times daily	Gatal (Itching); Hipertensi (Hypertension)
5	Bidara	<i>Ziziphus mauritiana</i>	Leaf, Fruit	Boiled for oral use or the fruit is consumed directly 1–2 times daily	Sariawan (Mouth ulcer); Perut mulas (Stomach ache)
6	Brotowali	<i>Tinospora crispa</i>	Stem	Boiled, filtered, and the liquid is taken orally once daily	Malaria; Diabetes
7	Ciplukan	<i>Physalis angulata</i>	Whole plant	Dried or boiled and the decoction is consumed 1–2 times daily	Diabetes; Bengkak (Swelling)
8	Jamblang	<i>Syzygium cumini</i>	Fruit, Leaf, Seed	Boiled for oral use; the fruit is eaten directly	Diabetes; Mencret (Diarrhea)
9	Jeruk Nipis	<i>Citrus aurantiifolia</i>	Fruit, Bark, Leaf	Squeezed or boiled for oral use; pounded and applied topically	Batuk berdahak (Productive cough)
10	Katarak / Kitolod	<i>Hippobroma longiflora</i>	Latex	The latex is dropped into the eyes 1–2 times daily	Sakit mata (Eye disease)
11	Kayu Manis	<i>Cinnamomum burmannii</i>	Bark	Boiled or infused, and the liquid is taken orally 1–2 times daily	Masuk angin (Common cold)
12	Kayu Secang	<i>Caesalpinia sappan</i>	Heartwood	Boiled or dried, and the decoction is consumed 1–2 times daily	Anemia; Lelah (Fatigue)
13	Kecubung	<i>Datura metel</i>	Fruit	Boiled and the decoction is consumed once daily	Pereda nyeri (Pain relief)
14	Keduduk	<i>Melastoma malabathricum</i>	Fruit	Consumed directly (5 seeds), 1–2 times daily	Panas dalam (Internal heat)
15	Kersen	<i>Muntingia calabura</i>	Leaf, Fruit	Boiled for oral use; the fruit is consumed directly	Batuk (Cough); Demam (Fever)
16	Mahkota Dewa	<i>Phaleria macrocarpa</i>	Fruit	Boiled in 3 glasses of water, and the decoction is consumed 1–2 times daily	Kolesterol (Cholesterol)
17	Manggis	<i>Garcinia mangostana</i>	Fruit peel	Dried or boiled, and the liquid is consumed	Sariawan (Mouth ulcer); Peluruh haid (Menstrual regulator)
18	Mengkudu	<i>Morinda citrifolia</i>	Fruit	Burned and applied to the feet, then bandaged twice daily	Mata ikan (Corn on foot)
19	Mimba	<i>Azadirachta indica</i>	Leaf, Bark, Seed	Pounded and applied topically; boiled for oral consumption 1–2 times daily	Gatal (Itching); Darah kotor (Impure blood)
20	Patah Tulang	<i>Euphorbia tirucalli</i>	Stem	The latex is applied to the skin twice daily	Kurap (Tinea); Panu (Tinea versicolor)
21	Patikan Kebo	<i>Euphorbia hirta</i>	Whole plant	Pounded for external application; boiled and consumed orally 1–2 times daily	Batuk anak (Children's cough); Dahak (Phlegm)
22	Pegagan	<i>Centella asiatica</i>	Leaf, Whole plant	Pounded or boiled, and the decoction is consumed 1–2 times daily	Pelupa (Forgetfulness)
23	Pinang	<i>Areca catechu</i>	Seed	Pounded or roasted, then boiled, and the decoction is taken once daily	Kuat gigi (Strengthen teeth); Tenaga (Energy)
24	Pisang	<i>Musa paradisiaca</i>	Fruit	5 drops of latex mixed with half a glass of water, taken twice daily	Diare (Diarrhea)
25	Selasih	<i>Ocimum</i>	Leaf, Seed	Boiled or infused, and the liquid is	Masuk angin (Common

No	Local Name	Scientific Name	Part Used	Preparation Method	Indication (Local/Academic)
		<i>basilicum</i>		consumed orally	cold); Lancar perut (Smooth digestion)
26	Senilo / Sawo	<i>Manilkara zapota</i>	Fruit	Grated, filtered, and the juice is taken twice daily	Diare (Diarrhea)
27	Sereh Dapur	<i>Cymbopogon citratus</i>	Stem, Leaf	Used fresh or boiled, and the decoction is consumed 1–2 times daily	Penghangat (Warming); Perut mulas (Stomach ache)
28	Sirih Cino / Tumpang Air	<i>Peperomia pellucida</i>	Leaf, Stem, Root	Boiled in 2 glasses of water, and the decoction is consumed twice daily	Kolesterol (Cholesterol)
29	Tapak Liman	<i>Boerhavia diffusa</i>	Entire plant	Dried or boiled, and the decoction is consumed 1–2 times daily	Gangguan Ginjal (Kidney disorder); Susah kencing (Dysuria)
30	Telang	<i>Clitoria ternatea</i>	Flower	Scalded with hot water, filtered, and consumed once daily	Peradangan (Inflammation)

Common indications include infectious diseases like malaria, digestive disorders such as diarrhea, fever, cough, and chronic conditions including hypertension and hypercholesterolemia, reflecting the broad therapeutic roles of these plants (Shrivastava et al, 2023).

The indication profile highlights that febrile and respiratory conditions, skin ailments, and gastrointestinal complaints are among the most common uses of medicinal plants.



Cardiometabolic disorders such as hypertension, diabetes, and hypercholesterolemia also represent a significant portion, while malaria and other conditions are less frequent. These patterns are consistent with global ethnobotanical studies in tropical regions, where traditional remedies are primarily applied to treat infections, support wound healing, and manage chronic metabolic disorders. The observed uses are supported by pharmacological properties including anti-inflammatory, antimicrobial, antioxidant, and metabolic regulatory activities found in many locally used species (Lordani et al, 2018; Shaito et al, 2020).

CONCLUSIONS

Local ethnobotanical practices around the Muaro Jambi Temple Complex predominantly have used leaves, rhizomes, and other plant parts, with decoction as the main preparation method. These practices are supported by pharmacological evidence of anti-inflammatory, antimicrobial, antioxidant, and antimetabolic activities, underscoring the importance of preserving traditional knowledge and informing the development of tropical phytopharmaceuticals.

Acknowledgements: This study was made possible through the support of programs under the Ministry of Education, Culture, Research, and Technology of Indonesia.

Authors' Contributions: Helman Kurniadi led the study design, coordinated field activities, and conducted the ethnobotanical data collection through community interviews and verification of plant specimens. Aminuddin contributed to literature analysis, facilitated community communication, and assisted in data acquisition. Fitria Heldiana supported the formulation of the research hypothesis and guided the ethical compliance process. All authors participated in data interpretation, contributed to manuscript writing, and approved the final version of the article.

Competing Interests: The authors declare that there are no competing interests.

REFERENCES

- Bolat, E., Sarıtaş, S., Duman, H., Eker, F., Akdaşçı, E., Karav, S., & Witkowska, A. M. (2024). Polyphenols: Secondary metabolites with a biological impression. *Nutrients*, *16*(15), 2550. <https://doi.org/10.3390/nu16152550>
- Bugaric, A., Bowles, E. J., Summer, K., Agnew, T., Barkla, B., & Lauche, R. (2025). Australian tea tree (*Melaleuca alternifolia*) oil: An updated review of antimicrobial and other medicinal properties. *Phytomedicine Plus*, *5*(3), 100846. <https://doi.org/10.1016/j.phyplu.2025.100846>
- Budiarti, M., Maruzy, A., Mujahid, R., Sari, A. N., Jokopriyambodo, W., Widayat, T., & Wahyono, S. (2020). The use of antimalarial plants as traditional treatment in Papua Island, Indonesia. *Heliyon*, *6*(12), e05562. <https://doi.org/10.1016/j.heliyon.2020.e05562>
- Caballero, S. V., McLaren, B., Carrasco, J. C., Alday, J. G., Fiallos, L., Amigo, J., & Onaindia, M. (2019). Traditional ecological knowledge and medicinal plant diversity in Ecuadorian Amazon home gardens. *Global Ecology and Conservation*, *17*, e00524.
- Chen, S. L., Yu, H., Luo, H. M., Wu, Q., Li, C. F., & Steinmetz, A. (2016). Conservation and sustainable use of medicinal plants: Problems, progress, and prospects. *Chinese Medicine*, *11*, 37. <https://doi.org/10.1186/s13020-016-0108-7>
- Coutinho, M. A. S., Casanova, L. M., Dos Santos Nascimento, L. B., Leal, D., Palmero, C., Toma, H. K., et al. (2021). Wound healing cream formulated with *Kalanchoe pinnata* major flavonoid is as effective as the aqueous leaf extract cream in a rat model. *Natural Product Research*, *35*(24), 6034–6039.
- Dhawan, S., & Olweny, E. O. (2020). *Phyllanthus niruri* (stone breaker) herbal therapy for kidney stones: A systematic review and meta-analysis of clinical efficacy, and Google Trends analysis of public interest. *Canadian Journal of Urology*, *27*(2), 10162–10166.
- Gundom, T., Sukketsiri, W., & Panichayupakaranant, P. (2025). Phytochemical analysis and biological effects of *Zingiber cassumunar* extract and three phenylbutenoids: Targeting NF- κ B, Akt/MAPK, and caspase-3 pathways. *BMC Complementary Medicine and Therapies*, *25*, 180. <https://doi.org/10.1186/s12906-025-04907-1>
- Hapid, A., Ariyanti, A., Erniwati, E., Suena, N. M., Adrianta, K. A., Yuniarti, K., et al. (2023). Diversity of medicinal plants and local wisdom of the Kaili tribe in Central Sulawesi, Indonesia. *Pharmacognosy Journal*, *15*(4), 535–540.
- Hop, N. Q., & Son, N. T. (2023). *Boesenbergia rotunda* (L.) Mansf.: A review of phytochemistry, pharmacology, and pharmacokinetics. *Current Organic Chemistry*, *27*(21), 1842–1856.
- Imelda, E., Khairan, K., Lubis, R. R., Kemala, P., Zulfiani, U., & Rahayu, S., et al. (2023). Anticataract activity of ethanolic extract of *Hippobroma longiflora* leaves: Ex vivo investigation. *Jurnal Penelitian Farmasi & Farmakognosi*, *11*(5), 833–840. <https://doi.org/10.56499/jppres23.1691>
- Jafri, S. A., Khalid, Z. M., Khan, M. R., Ashraf, S., Ahmad, N., Karami, A. M., et al. (2023). Evaluation of some essential traditional medicinal plants for their potential free scavenging and antioxidant properties. *Journal of King Saud University–Science*, *35*(3), 102562. <https://doi.org/10.1016/j.jksus.2023.102562>
- Jitpromma, T., Saensouk, S., Saensouk, P., & Boonma, T. (2025). Diversity, traditional uses, economic values, and conservation status of Zingiberaceae in Kalasin Province, Northeastern Thailand. *Horticulturae*, *11*(3), 247. <https://doi.org/10.3390/horticulturae11030247>
- Konrad, C., Wagner, M., Foschum, F., & Kienle, A. (2025). Importance of the layered structure of leaves on the determination of their scattering and absorption properties. *Science of Remote Sensing*, *11*, 100223. <https://doi.org/10.1016/j.srs.2025.100223>
- Kumar, A. (2020). Phytochemistry, pharmacological activities and traditional uses of *Kaempferia galanga* L.: A review. *Journal of Ethnopharmacology*, *253*, 112667. <https://doi.org/10.1016/j.jep.2020.112667>
- Kwon, C. Y., Lee, H. G., Jeong, H., Kim, S. C., & Jang, S. (2024). Safety of herbal decoctions: A scoping review of clinical studies in South Korea focusing on liver and kidney functions. *Journal of Ethnopharmacology*, *325*, 117664. <https://doi.org/10.1016/j.jep.2023.117664>
- Liu, C., Jullian, V., & Chassagne, F. (2024). Ethnobotany, phytochemistry, and biological activities of *Psidium guajava* in the treatment of diarrhea: A review. *Frontiers in Pharmacology*, *15*, 1459066. <https://doi.org/10.3389/fphar.2024.1459066>
- Lordani, T. V. A., de Lara, C. E., Ferreira, F. B. P., de Souza Terron Monich, M., Mesquita da Silva, C., Felicetti Lordani, C. R., et al. (2018). Therapeutic effects of medicinal plants on cutaneous wound healing in humans: A systematic review. *Mediators of Inflammation*, *2018*, 7354250. <https://doi.org/10.1155/2018/7354250>
- Nurcahyo, F. D., Zen, H. M., Rahma, H. S., Triyanto, A., Yasa, A., Naim, D. M., & Setyawan, A. D. (2024). Ethnobotanical study of medicinal plants used by local communities in the Upper Bengawan Solo River, Central Java, Indonesia. *Bonorowo Wetlands*, *14*(1). <https://doi.org/10.13057/bonorowo/w140104>
- Oladeji, O. S., Adelowo, F. E., Oluyori, A. P., & Bankole, D. T. (2020). Ethnobotanical description and biological activities of *Senna alata*. *Evidence-Based Complementary and Alternative Medicine*, *2020*, 2580259. <https://doi.org/10.1155/2020/2580259>
- Patra, A., Abdullah, S., & Pradhan, R. C. (2022). Review on the extraction of bioactive compounds and characterization of fruit

- industry by-products. *Bioresources and Bioprocessing*, 9(1), 14. <https://doi.org/10.1186/s40643-022-00498-3>
- Periferakis, A. T., Troumpata, L., Periferakis, K., Scheau, A. E., Savulescu-Fiedler, I., Caruntu, A., et al. (2023). Kaempferol: A review of current evidence of its antiviral potential. *International Journal of Molecular Sciences*, 24(22), 16299. <https://doi.org/10.3390/ijms242216299>
- Rajanna, M., Bharathi, B., Shivakumar, B. R., Deepak, M., D'Souza, P., Prabakaran, D., & Vijayabhaskar, T. (2021). Immunomodulatory effects of *Andrographis paniculata* extract in healthy adults – An open-label study. *Journal of Ayurveda and Integrative Medicine*, 12(3), 529–534. <https://doi.org/10.1016/j.jaim.2021.06.004>
- Shaito, A., Thuan, D. T. B., Phu, H. T., Nguyen, T. H. D., Hasan, H., Halabi, S., et al. (2020). Herbal medicine for cardiovascular diseases: Efficacy, mechanisms, and safety. *Frontiers in Pharmacology*, 11, 422. <https://doi.org/10.3389/fphar.2020.00422>
- Shrivastava, A. K., Keshari, M., Neupane, M., Chaudhary, S., Dhakal, P. K., Shrestha, L., et al. (2023). Evaluation of antioxidant and anti-inflammatory activities, and metabolite profiling of selected medicinal plants of Nepal. *Journal of Tropical Medicine*, 2023, 6641018. <https://doi.org/10.1155/2023/6641018>
- Siagian, A. Y., Yuniarti, R., Daulay, A. S., & Pulungan, A. F. (2025). Vitamin C composition and antioxidant activity of herbal kombucha tea from bidara leaves (*Ziziphus mauritiana* Lam). *Journal of Pharmaceutical Sciences*, 8(2), 1004–1017. <https://doi.org/10.36490/journal-jps.com.v8i2.880>
- Sun, J., Liu, B., Rustiami, H., Xiao, H., Shen, X., & Ma, K. (2024). Mapping Asia Plants: Plant diversity and checklist of vascular plants in Indonesia. *Plants*, 13(16), 2281. <https://doi.org/10.3390/plants13162281>
- Susanti, T., Musyaddad, K., Oryza, D., Utami, W., & Arsyad, M. (2020). Tumbuhan khas di kawasan Candi Muaro Jambi: Kajian etnobotani dan potensi ekonomi. *Al-Kauniah: Jurnal Biologi*, 13(2), 156–168. <https://journal.uinjkt.ac.id/index.php/kauniah/article/view/13348>
- Sutomo, A. V., Aprilianes, A. V., Kartinah, N., Arnida, A., Muslimawati, K., & Akbar, N. H. (2024). Ethnobotanical study of medicinal plants of Banjar and Java tribes in Pandansari Village, South Kalimantan. *Borneo Journal of Pharmacy*, 7(2), 136–146. <https://doi.org/10.33084/bjop.v7i2.6636>
- Tamin, P., Puris, R., & Hardiyanti, R. (2019). Exploration of tree species in Muaro Jambi Temple Complex. *Media Konservasi*, 24(3), 245–251. <https://doi.org/10.29244/medkon.24.3.245-251>
- Wahyuni, D., & Sari, W. (2021). Belimbing wuluh (*Averrhoa bilimbi* Linn.) leaf powder as a natural repellent against meat fly (*Sarcophaga* sp.). *Jurnal Kesehatan Masyarakat*, 17(2), 159–168. <https://doi.org/10.15294/kemas.v17i2.25548>
- Wang, S. Y., Zhao, H., Xu, H. T., et al. (2021). Kaempferia galanga L.: Progresses in phytochemistry, pharmacology, toxicology and ethnomedicinal uses. *Frontiers in Pharmacology*, 12, 675350. <https://doi.org/10.3389/fphar.2021.675350>
- Zuhri, U. M., Purwaningsih, E. H., Fadilah, F., & Yuliana, N. D. (2022). Network pharmacology integrated molecular dynamics reveals the bioactive compounds and potential targets of *Tinospora crispa* Linn. as insulin sensitizer. *PLoS ONE*, 17(6), e0251837. <https://doi.org/10.1371/journal.pone.0251837>
- Zulkarnaen, Z., Hariri, H., Rahmaningtyas, R., & Nugroho, N. (2023). Revealing the tree species diversity within Koto Mahligai Temple Ruin, Muaro Jambi. *Jurnal Sylva Lestari*, 11(3), 396–407.

THIS PAGE INTENTIONALLY LEFT BLANK