

Etnopharmacy of Herbal Plants

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ARTICLE INFORMATION

Received: 4 April 2025

Revised : 9 Mei 2025

Accepted: 25 Juni 2025

DOI:

KEYWORDS

Keywords: Ethnopharmacology, Medical Plants

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A B S T R A C T

Indonesia's rich biodiversity, including herbal plants, is a gift that needs to be preserved. Herbal plants in a region have their own uniqueness, including the people of Lalibo Village, Mawasangka Tengah District, who have long used plants as a source of their medicine. This can be used as a source of information on medicinal plants. Ethnopharmacy is a study of how a particular community or region uses medicinal plants, as well as examining the use of medicines, especially traditional medicines, by local communities (ethnicities). Lalibo Village is one of the villages that has the potential for plant diversity that is used for traditional medicine. This study aims to identify the types of herbal plants, how to use them, and the processing of medicinal plants by the people of Lalibo Village. The use of medicinal plants is one way to find new medicines in modern times, traditional medicinal plants are usually the main source of the emergence of modern medicines. The method used is descriptive qualitative with data collection techniques through observation, selection of informants, interviews, questionnaires, documentation, and identification. Informants were selected using the snowball sampling technique with a total of 19 people. The results of the study showed 40 types of plants used by the community, including turmeric as a medicine for vaginal discharge and menstrual pain, betel leaves as a medicine for vaginal discharge, and penicillin as a medicine for wounds. The part of the plant that is often used is the leaves, with a percentage of 55%, while the most common way of processing is by boiling, with a percentage of 42.5%.

INTRODUCTION

Indonesia's biodiversity is rich in natural resources and has a variety of cultures of various tribes and has its own uniqueness for each region. The differences in culture and customs of a region are a wealth owned by the Indonesian nation. The use of natural ingredients such as plants in traditional medicine is increasing. People are now increasingly using plants to treat various diseases, which is one of the growing phenomena today (Yolandari & Mustiqawati, 2022). One of them is the diversity of medicinal plant uses found in one of the areas in Mawasangka Tengah District.

In Indonesia, the use of traditional medicine is believed by some people to cure various types of diseases. Traditional medicine is a mixture that includes ingredients derived from plants, animals, minerals, and natural essences, which are mixed and then prepared for consumption. This medicine has been believed for generations by the community to be able to cure various diseases (Adiyasa & Meiyanti, 2021). Medicinal plants are plants that contain substances that can be used for treatment. The use of plants as medicine by a community includes all parts of the plant or certain parts such as leaves, flowers, fruit, seeds, stems, bark, roots, and rhizomes (Alang et al., 2021).

Medicinal plants are the most important ingredients of traditional medicine that have been used for generations by the people of Lalibo village to treat diseases. Based on data obtained by WHO regarding the use of natural materials and the use of herbal products, the Indonesian population reaches around 95.6% for the use of herbal plants in the form of herbal medicine (Oktarlina et al., 2018).

Plants contain secondary metabolic compounds that are used in medicine. Ethnopharmacological studies aim to identify which plants are used in active drug ingredients in certain areas. Although there are currently many artificial drugs, the use of plants as a source of medicine should not be eliminated. Many medicinal substances, such as penicillin, streptomycin, and chloramphenicol, come from plants (Hamzah et al., 2022).

Various medicinal plants in Indonesia can provide health benefits through testing the content of the plants. Each content of the plants can later be used as various health products, both in the form of traditional medicines such as herbal medicine, or natural cosmetics such as herbal scrubs. Natural medicines, which include herbal products, standardized herbal medicines, and phytopharmaceuticals, have been registered with the Food and Drug Supervisory Agency of the Republic of Indonesia. Until 2018, the number reached 2,329 products (Lestari et al., 2022).

Mawasangka Tengah District is one of the administrative areas in Central Buton Regency, which has its own unique charm and characteristics (Nurhayani & Hadara, 2018). Mawasangka Tengah is rich in various types of plants that are useful for everyday life, both as food ingredients, industrial materials, and medicinal herbs. This diversity has long been believed by the community, thanks to the legacy of traditions from their ancestors. Therefore, it is important to continue this tradition to the next generation.

Lalibo Village is a village where most of the population works as farmers. In addition to farming, some residents also work as fishermen and a small number as civil servants to meet their daily needs. The people of this village believe in and use plants for traditional medicine in their daily lives, because they believe that traditional medicine can cure various diseases, has few side effects, is cheap, and is easily accessible. In addition to treatment, medicinal plants are also used for body beauty. However, one of the obstacles still faced by the community is the limited health facilities such as pharmacies, public hospitals, drug stores, and medical personnel.

Therefore, this study was conducted in Lalibo Village, Mawasangka Tengah District, with the aim of exploring and seeking information about various plants that are used as medicine, understanding the use of medicinal plants, and knowing how to process plants that are used as traditional medicine. Medicinal plants refer to plants that can be used in medicine, both those that are intentionally cultivated and those that grow wild.

Etnopharmacy is the study of how a community or region utilizes medicinal plants and studies the use of medicines, especially traditional medicines, by local (ethnic) community groups. Etnopharmacy research aims to understand how plants are utilized and used in disease therapy.

METHOD

This research is descriptive qualitative. Data were collected through questionnaires and interviews. The research was conducted in Lalibo Village, Mawasangka Tengah District in June - July 2024.

The population of this study was the people of Dalibo Village, Mawasangka Tengah District who knew the types of herbal plants that were used as medicine or herbal concoctions. The sample of this study was informants and respondents who knew the types and efficacy of herbal plants in Lalibo Village, Mawasangka Tengah District.

The research sample was taken using the snowball sampling technique, which is one person is deliberately selected with predetermined criteria, then the person finds out about information from other people who use plants as herbal medicine, resulting in various answers. The sample obtained was 19 informants,

The research instruments used in this study can be seen in table 1 below:

Table 1. Research Instruments

No	Tool Name	Uses/Functions
1	Camera	To take pictures of medicinal plants
2	Stationery	To record research data
3	Identification Book	To identify medicinal plants
4	Questionnaire Sheet	To guide the interview process for informants

Source: (Ramandey & Bunei, 2021).

Data collection techniques are carried out by giving questionnaires to respondents, where questionnaires are a way of collecting data indirectly. Interviews to clarify information obtained from respondents. In data analysis, qualitative descriptive methods are used which are presented in table form. Data are grouped by family, local plant name/regional name, Indonesian name/common name, Latin name, organ part used, medicinal plant properties and how to use them.

RESULTS & DISCUSSION

The results of the interview research and community questionnaire answers conducted in Lalibo Village, Mawasangka Tengah District, Buton Tengah Regency. It is known that there are 40 species if grouped into 30 families of medicinal plants. Plant data can be seen in the form of table 2 as follows:

Table 2. Types of Medicinal Plants Utilized by the Community of Lalibo Village, Mawasangka Tengah District, Central Buton Regency

No	Indonesian and Local Names	Scientific Name	Family	Organs Used	Utilization	How to Use
1.	Kunyit (Kuni)	<i>Curcuma longa L.</i>	Zingiberaceae	Rhizome	Vaginal Discharge,	Drink
2.	Temu Hitam (Suni)	<i>Curcuma auruginosa</i>	Zingiberaceae	Rhizome	Menstrual Pain and	and
3.	Jahe (Lokia)	<i>Zingiber officinale</i>	Zingiberaceae	Rhizome	Itching	Applied
4.	Kencur (Toduku)	<i>Kaempferia galanga L.</i>	Zingiberaceae	Rhizome	Increase Appetite	Drink
5.	Lengkuas (Laja)	<i>Alpinia galanga L.</i>	Zingiberaceae	Rhizome	Gout and Appetite	Drink
6.	Jarak Pagar (Tanga-ntanga)	<i>Jatropha curcas L.</i>	Euphorbiaceae	Stem	Increase appetite	Applied
7.	Katuk (katu)	<i>Sauropus androgynus</i>	Euphorbiaceae	Leaves	Fever	Drink
8.	Sirsak (Siyhikaya Belanda)	<i>Annona morocata</i>	Annonaceae	Leaves	Toothache	Applied
9.	Srikaya (siyhikaya)	<i>Annona squamosa L.</i>	Annonaceae	Leaves	Smooth Breast Milk and Fertility	Drink
10.	Sereh (Padhamalala)	<i>Cymbopogon citratus</i>	Poaceae	Roots	Fertility and Smooth Breast Milk	Drink
11.	Sirih (Gili)	<i>Piper betle L.</i>	Piperaceae	Leaves	Smooth Breast Milk and Fertility	Drink
12.	Sirih Cina (Gilinocona)	<i>Peperomia pullucida</i>	Piperaceae	Leaves	To Warm the Body	Wash
13.	Kiriyuh (Lahunai/komb a-komba)	<i>Eupatorium odoratum</i>	Asteraceae	Leaves	Vaginal Discharge	Applied
14.	Kumis Kucing (Kumis Kucing)	<i>Orthosipon sristatus</i>	Lamiaceae	Leaves	External Wounds	Applied
15.	Kemangi (Ngkamangi)	<i>Ocimum sanctum L.</i>	Lamiaceae	Leaves	External Wounds	Drink
16.	Tembelean (Tainomanu)	<i>Lantana cemara</i>	Verbanaceae	Leaves	Diabetes	Chewed
17.	Pinang (Pina)	<i>Areca catechu</i>	Arecaceae	Fruit	Thrush and Nausea	Applied
18.	Kelapa merah (Aikadea)	<i>Coconus nucifera L.</i>	Arecaceae	Coconut water	Skin Diseases, Boils, Swelling and Itching	Chewed
19.	Kelapa muda (Kalembuno)	<i>Coconus nucifera L.</i>	Arecaceae	Coconut water and coconut oil	Cleansing and Strengthening Teeth and Gums	Drink
20.	Jambu Biji (Bulamaaka)	<i>Psidium guajava L.</i>	Myrtaceae	Leaves	Vomiting blood	Drink
21.	Jeruk Nipis (Muntekauwei)	<i>Citrus Aurantiifolia</i>	Rutaceae	Fruit	Constipation and antidote	Drink
22.	Pepaya (Kapaeya)	<i>Carica papaya L.</i>	Caricaceae	Leaves	Diarrhea	Drink
23.	Pandan (Pandan)	<i>Pandanus amaryllifolius Rox</i>	Pandanaceae	Leaves	Cough	Drink
24.	Delima (Dalima)	<i>Punica granatum</i>	Punicaceae	Fruit	Fever	Drink
25.	Sambiloto (Sambiloto)	<i>Andrographis paniculata</i>	Acanthaceae	Leaves	Fever	Eat
26.	Kelor (Kaudhawa)	<i>Moringa oleifera</i>	Moringaceae	Leaves	Cleansing Dirty Blood	Drink
27.	Lidah Buaya (Lelabueya)	<i>Aloe vera</i>	Liliceae	Leaves	Gastric Pain	Eat and drink
28.	Asam (Sampalu)	<i>Tamarindus indica L.</i>	Fabaceae	Flowers	Jaundice	Applied
29.	Belimbing Wuluh (Dahu)	<i>Averrhoa bilimbi L.</i>	Oxalidaceae	Leaves	Hair Fertility	Drink
30.	Bayam Merah (Bayamu kadea)	<i>Amaranthus tricolor</i>	Amaranthaceae	Leaves	Appetite	Drink
31.	Kersen (Koroseni)	<i>Muntinga calabura L.</i>	Elaeocarpaceae	Fruit	Cough, Sore Throat and Diabetes	Drink
32.	Mengkudu (Bangkudu)	<i>Morinda citrifolia</i>	Rubiaceae	Leaves	Blood Booster	Drink
33.	Kembang Sepatu (Kembang Sepatu)	<i>Hibiscus rosasinensis</i>	Malvaceae	Leaves	Diabetes	Drink
34.	Awar-Awar (Libho)	<i>Ficus septica burm L.</i>	Moraceae	Tubers	Eliminates Bad Breath and Body Odor	Applied

35.	Bawang Dayak (Bawa Hutun)	<i>Eleutherine bulbosa</i>	<i>Iridaceae</i>	Leaves	Boils	Applied
36.	Jambu mete (Jambu pangkoha)	<i>Anacardium occidentale</i>	<i>Anacardiaceae</i>	Rhizomes	Boils and Itching	Drink
37.	Alang alang	<i>Imperata cylindrica</i>	<i>Poaceae</i>	Leaves	Reduces Pressure Blood	Drink
38.	Bakung (Bala-bala)	<i>Crinum asiaticum</i>	<i>Amaryllidaceae</i>	Leaves, Flowers, roots	Diarrhea	Drink
39.	Bunga jarum jam	<i>Catrantus roseus</i>	<i>Apocynaceae</i>	Sap	Fever, infection, blood in the urine, nosebleeds and vomiting	Kneaded and Apply
40.	Penisilin (Pinsili)	<i>Penicillium expansum</i>	<i>Tricocomaceae</i>	Rhizome	Swelling and broken bones	Drink

Source: (Primary Data, 2024)

Based on the research results obtained from 19 informants conducted through direct interviews and questionnaire answers to the community of Lalibo Village, Mawasangka Tengah District, Central Buton Regency. By using the snowball sampling method as a way to find out the family and type of medicinal plants, the parts used, efficacy/diseases and how to process them.

The results obtained recorded that there were 40 types of plants used as medicinal plants, namely turmeric (*Curcuma longa L.*), black ginger (*Curcuma aeruginosa*), galangal (*alpinia galanga*), ginger (*Zingiber officinale*), kencur (*Kaempferia galanga L.*), jarak pagar (*Jatropha curcas L.*), katuk (*Sauropus androgynus*), soursop (*sihikayabalanda*) (*Annona muricata L.*), custard apple (*annona squamosa*), lemongrass (*padhamalala*) (*cymbopogon citratus*), siri (*Piper betle L.*), Siri cina (*Peperomia pellucida*), balacida (lahunai/komba-komba) (*chromolaena odoratum*), cat's whiskers (*dangkunobeka*) (*Orthosipon aristatus*), basil (*Ocimum santum*). L), Tembelekan/chicken dung (*Lantana camara*), Pinang/pina (*Areca cathecu*), red coconut/aikadea (*Cocos nucifera L.*), young coconut/Kalembuno (*Cocos nucifera L.*) Guava/bulamalaka (*Psidium guajava L.*), lime/muntekauwei (*Citratus aurantiifolia*), Papaya/kapaeya, (*Carica papaya L.*), Pandan (*Pandanum amaryllifolius*), Pomegranate/Dalima (*Punica granatum*), Sambiloto (*Andrographis paniculata*), Moringa/Kaudawa (*Moringa oleifera*), Aloe vera/lelabueya (*Aloe vera*), Tamarind/sampalu (*Tamarindus indica*), starfruit (*Averrhoa bilimbi*). L), red spinach/bayamukadea (*Amaranthus Tricolor*), gersen/geresen (*Muntinga calabura*), noni/mangkudu (*Morinda Citrifolia*). Hibiscus flowers (*Hibiscus Rosa-sinensis*), awar-awar/libo (*Ficus septic burm*), Bawang Dayak (*Eleutherine bulbosa*), cashew nuts/dambupangkoha (*Anacardium occidentale*), daffodils/bala-bala (*Lilium regalr*), penicillin (*Penicillium expansum*), periwinkle (*Catrantus roseus*), reeds/lencinobeka (*Imperata cylindrica*).

Types of plants are grouped into 30 families, namely the family *Zingiberaceae*, *euphorbiaceae*, *annonaceae*, *poaceae*, *piperaceae*, *asteraceae*, *lamiaceae*, *verbanaceae*, *arecaceae*, *myrtaceae*, *rutaceae*, *caricaceae*, *pandanaceae*, *punicaceae*, *acanthaceae*, *moringaceae*, *liliceae*, *fabaceae*, *oxalidaceae*, *amaranthaceae*, *elaecarpaceae*, *rubiaceae*, *malvaceae*, *moraceae*, *iridaceae*, *anacardiaceae*, *amaryllidaceae*, *tricocomaceae*, *apocynaceae*, *poaceae*.

The use of natural materials from plants is widely used by people from the *Zingiberaceae* family. The results of the interview stated that the types of plants in this family are numerous and easy to obtain and have advantages in curing various symptoms of disease. In addition, *Zingiberaceae* is the most frequently used group of medicinal plants because these plants grow easily in various types of soil. The types of plants referred to in the family group *Zingiberaceae* yaitu *curcuma longa*, *curcuma aurunginosa*, *zingiber officinale*, *kaempferia galangal L.*, *alpinia galangal L* (Nasution et al., 2020).

Handling of body heat can be done through pharmacological, non-pharmacological, or a combination of both. Pharmacological actions involve giving antipyretic drugs to lower body temperature (Alfyanita et al., 2023). Galangal (*Laja*) is used by the Mawasangka community as a natural fever reducer (antipyretic).

It is known from the medicinal plants found in Mawasangka Tengah District that have antioxidant properties and are used as antibacterial, namely the starfruit plant. Starfruit leaves have these properties because the secondary metabolites contained in the leaves include saponins, tannins, flavonoids, peroxidase, potassium citrate and calcium oxalate (Mustiqawati et al., 2022).

Table 3. Percentage of Medicinal Plant Parts Used by the Community of Lalibo Village, Mawasangka Tengah District, Central Buton Regency

Plant parts	Frequency	Percentage
Leaf	22	55
Fruit	7	17,5
Rhizome	5	12,5
Root	1	2,5
Stem	2	5
Flower	2	5
Tuber	1	2,5
Total	40	100%

Source: (Primary Data, 2024)

Around 40 types of plants have been used as medicine with a focus on the leaves, fruit, rhizomes, roots, stems, flowers, tubers. Plant organs that are often used by the community are in the leaves by 55%, fruit 17.5%, rhizomes 12.5%, stems 5%, flowers 5%, roots 2.5% and tubers 2.5%. Each part of the plant has different properties.

The use of leaves as a medicinal ingredient is because leaves are organs that are easy to obtain, are continuously available, and taking leaves will not interfere with the preservation of the medicinal plant (Situmorang & Sihombing, 2018).

Lime leaves (*Citrus aurantifolia*) can be used naturally to treat coughs, dysentery, diarrhea, and acne. The use of lime leaves in traditional medicine can be further developed to maximize its benefits (Yolandari & Mustiqawati, 2022). Guava leaves have an effect that can reduce edema, which is swelling of the subcutaneous tissue due to egg white induction, which causes the body to respond to tissue damage, known as inflammation.

Table 4. Percentage of Methods of Mixing Medicinal Plants Used by the Community of Lalibo Village, Mawasangka Tengah District, Central Buton Regency

How to mix herbs	Frequency	Percentage
Boiled	17	42,5
Pounded	10	25
Grated	1	2,5
Unprocessed	7	17,5
Brewed	2	5
Squeezed	3	7,5
Total	40	100%

Source: (Primary Data, 2024)

The Lalibo Village community processes herbal plants by boiling 42.5%, pounding 25%, grating 2.5%, brewing 5%, squeezing 7.5% and consuming directly 17.5%. The most common is through the boiling technique because people believe that boiling will reduce the bitter taste and is safe for consumption. Basically, the boiled process aims to remove medicinal substances from plant cells. The boiling method involves exposing plant organs to high temperatures, which can cause denaturation of the proteins that make up the cell membrane. This process increases membrane permeability, so that cell contents can escape from the cell (Supriyanti et al., 2015).

The use of traditional medicine through boiling is a processing technique that is widely used and easy to do. People generally prefer processing herbal medicine through boiling because it is easy and practical and the plant fiber is not so thick when compared to being grated and then drunk directly (Hastuti et al., 2022).

Medicinal plants whose processing is mixed with several additional ingredients such as salt. For example, turmeric plants are processed by adding coriander, tamarind and nutmeg which are believed and proven to relieve pain during menstruation.

The use of medicinal plants has advantages because it functions as a potion to treat diseases that often appear or recur. Usually, these medicinal plants are obtained from people's yards, either preserved or growing by themselves. In addition, the use of herbal plants does not require large costs

compared to synthetic drugs. Herbal plants are also considered to have milder and less dangerous side effects than synthetic drugs containing chemicals.

People understand that plants are not only useful as medicine to cure diseases but also used as food ingredients consumed every day, starting from kitchen spices to vegetables. Plants can also add aesthetics or beauty to people's yards.

Most people utilize plants that grow around the Lalibo Village settlement because of their varied types, community interactions related to the efficacy of plants in the surrounding environment, and also one of the hereditary beliefs that have been used for a long time. Therefore, further research is needed to identify the active ingredients in medicinal plants. In addition, conservation efforts must be taken seriously as a way to prevent the extinction of the tradition of utilizing medicinal plants from generation to generation.

CONCLUSION

Based on the results of ethnopharmaceutical research conducted in Lalibo Village, Mawasangka Tengah District. It can be concluded that there are 40 types of plants, people often use turmeric rhizome plants as a medicine for vaginal discharge and menstrual pain, betel leaves as a medicine for vaginal discharge and penicillin as a wound medicine. The most widely used plant organ is the leaf part by 55%, then people are accustomed to processing plants as medicine by boiling the presentation by 42.5%.

Ethnopharmacological research faces a number of obstacles, such as limited written documentation of the use of medicinal plants, which are generally passed down orally. Ethical and intellectual property rights challenges related to the use of traditional knowledge are also important issues.

ACKNOWLEDGMENTS

I would like to thank all parties who have contributed to the preparation of this journal. My special thanks go to my supervisor, colleagues, and family who provided moral and material support. Your support means a lot in completing this research.

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