



## Ethnobotanical Study of Medicinal Plants Used by Communities in Bou Village, Sojol District, Donggala Regency

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**Abstract:** This study aimed to identify and document the medicinal plant species utilized by the community in Bou Village, Sojol District, Donggala Regency, including their methods of preparation, the plant parts used, and the types of diseases treated. This research employed a qualitative descriptive design using the snowball sampling method. Data were collected through field observations, unstructured interviews with six informants who possessed traditional knowledge of medicinal plants, and direct documentation. The data were analyzed descriptively using a qualitative approach by describing the medicinal plant species identified, including their local names, scientific names, families, parts used, therapeutic uses, and methods of preparation. The results showed that 24 medicinal plant species belonging to 18 families were used to treat various ailments, most commonly fever, digestive disorders, urinary tract infections, coughs, and others. Leaves were the plant part most frequently used, while boiling was the most common method of preparation. This study highlights the importance of preserving local communities' traditional knowledge regarding the use of medicinal plants as a form of local wisdom that has been passed down from generation to generation and should be sustainably maintained.

**Keywords:** Bou Village; identification; local wisdom; medicinal plants

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### INTRODUCTION

Indonesia is among the countries with the largest forest areas in the world and is rich in diverse flora and fauna. The country possesses a wide variety of plant species that can be used for medicines, spices, and other purposes. Indonesia is estimated to have approximately 35,000 species of higher plants, of which 3,500 have been identified as medicinal plants (Ledo et al., 2019). This natural resource potential has been utilized by local communities for generations as an alternative form of traditional medicine and has become an integral part of local wisdom across different regions. Medicinal plants are plants that contain active compounds believed to be capable of treating various diseases (Wulandara et al., 2018). The use of medicinal plants, passed down from one generation to the next, has become part of Indonesian cultural heritage (Hasanah & Daesusi, 2019). In addition to their therapeutic functions, medicinal plants also have important economic and social value for local communities. Many people continue to rely on medicinal plants to address a range of health problems, particularly in areas where access to modern healthcare services is limited (Maharani et al., 2025). This highlights the significant role of medicinal plants in community health systems (Lestari et al., 2021).

Bou Village is one of the areas located in Donggala Regency, Central Sulawesi Province, and is known for its ethnic diversity, encompassing both indigenous and migrant communities (Suryadi, 2021). This diversity has created a unique process of cultural acculturation, particularly in the practice of using natural resources as

traditional medicine. The ethnobotanical knowledge of the Bou Village community reflects a combination of local wisdom transmitted across generations and external healing traditions introduced by other ethnic groups, which have subsequently adapted to the rich biodiversity of the local tropical forests. Social interactions among these various ethnic groups have generated an interesting ethnobotanical dynamic in the use of medicinal plants (Fauzi et al., 2017).

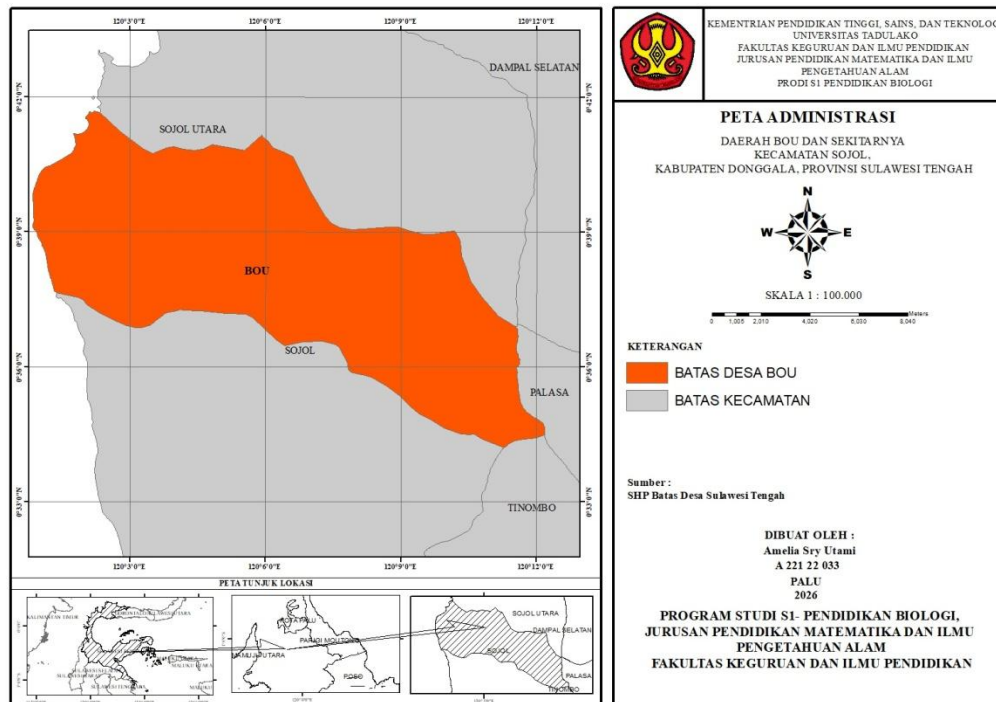
Ethnobotanical knowledge of medicinal plants within a community refers to the community's understanding of how to prepare remedies or materials derived from plants, animals, minerals, galenic preparations, or combinations of these materials (Susandarini et al., 2025). In general, traditional medicines utilize natural materials such as roots, stems, leaves, flowers, and fruits (Hariani, 2018). Since ancient times, humans have depended heavily on medicinal plants to treat various diseases (Helmina & Hidayah, 2021). The use of herbal medicine to maintain health and treat illness remains an important necessity, especially as the rising cost of modern medical treatment continues to burden communities (Sumayyah & Salsabila, 2017). One important effort to maintain public health is to utilize the potential of medicinal plants growing in the surrounding environment, given their crucial role in primary healthcare (Duryat et al., 2025). Ethnobotanical knowledge regarding medicinal plants and their uses has been inherited across generations as part of local wisdom that must continue to be preserved and developed (Septiani et al., 2025).

Based on interviews conducted during the preliminary observation, many plant species are used by the people of Bou Village for traditional treatment. This practice is driven by limited access to healthcare facilities, the high cost of modern medicine, and the side effects associated with such treatments. However, this knowledge is generally held only by older people or traditional healers, while younger generations tend to place greater trust in modern medicine, leading to the gradual erosion of this local knowledge transmission. The ongoing development of cultural modernization raises concerns that traditional knowledge held by the community as part of local wisdom will fade and eventually disappear. Therefore, ethnobotanical research can play an important role in preserving local wisdom and ensuring the sustainable use of plants by the community.

The medicinal plants used by the people of Bou Village have not yet been properly identified, largely because no previous research has been conducted on the identification of medicinal plants in the village. Therefore, research is needed to identify and document the species of medicinal plants used, including their methods of preparation, the plant parts utilized, and the types of diseases treated. Such documentation is essential to ensure that local wisdom in treating various illnesses is preserved. With the availability of clear data, the community can continue to make independent use of local natural resources, while this effort also serves as an initial step toward protecting the conservation of medicinal plants in the environment surrounding Bou Village.

## **METHOD**

This study employed a qualitative descriptive design aimed at identifying and documenting the medicinal plant species utilized by the local community. The research was conducted in Bou Village, Sojol District, Donggala Regency. The location of the study is presented in Figure 1.



**Figure 1.** Map of the study area

Informants were selected using a snowball sampling technique, a method that involves the gradual and continuous recruitment of participants, in which initial participants recommend other individuals who meet the predetermined criteria (Sugiyono, 2022). The informants in this study consisted of local community members who possessed knowledge and experience regarding the use of medicinal plants.

Data were collected through three stages: field observation, interviews, and direct documentation. Field observation was conducted to directly examine the medicinal plant species found in the environment of Bou Village. Interviews were conducted in a flexible and in-depth manner with informants who had traditional knowledge of medicinal plants. The interview questions covered the types of plants used, the plant parts utilized, methods of preparation, and the types of diseases treated. Direct documentation was carried out by photographing medicinal plants in the field as a means of data verification and to complement the collected information.

The data obtained were analyzed descriptively using a qualitative approach by describing the medicinal plant species identified, including their local names, scientific names, families, parts used, medicinal benefits, and methods of preparation.

## RESULTS AND DISCUSSION

Based on interviews with six informants, the process of selecting informants began with a visit to the village office to obtain preliminary information regarding individuals knowledgeable about the use of medicinal plants. At the initial stage, the traditional leader was recommended as an informant; however, this individual did not possess in-depth knowledge of medicinal plants and subsequently recommended a traditional healer (*sando*). The healer then recommended other community members who regularly use medicinal plants. Thus, the identification of informants was conducted gradually through successive recommendations from each preceding informant until the final informant no longer provided additional recommendations, at which point the interviews were concluded. The results showed that the community in the village uses 24 plant species as traditional medicines. These plants are obtained

from home gardens, forests, and cultivated fields. The detailed data are presented in Table 1.

**Table 1.** Plant species used for medicinal purposes

Local Name	Scientific Name	Family	Plant Part Used	Medicinal Use	Method of Preparation
Kecibeling	<i>Strobilanthes crispata</i> L.	Acanthaceae	Leaves	Kidney stones	Boil 5 leaves in 1 glass of water until the volume is reduced to approximately 1/2 glass. Strain and drink after cooling.
Kumis kucing	<i>Orthosiphon aristatus</i> Blume.	Lamiaceae	Leaves	Urinary tract infection	Boil 5–6 leaves or a handful in water until reduced, strain, and drink after cooling in the morning and evening.
Kunyit putih	<i>Curcuma zedoaria</i> (Christm). Roscoe.	Zingiberaceae	Rhizome	Breast cancer	White turmeric is thinly sliced and dried indoors (without direct sunlight), then brewed and consumed while warm.
				Cyst	White turmeric may also be grated, squeezed, and filtered until yielding 1/2 glass, then consumed once daily for 1 week.
Ramayana (Miana)	<i>Plectranthus scutellarioides</i> L.	Lamiaceae	Leaves	Hematemesis	Prepare 5 leaves or a handful, crush until the juice is released, then drink in the morning and evening.
Cocor bebek	<i>Kalanchoe pinnata</i> Lam.	Crassulaceae	Leaves	Fever	Prepare 1–2 leaves, crush them, and apply to the forehead.
				Boils	Prepare 1 leaf and add 1 slice of turmeric, then crush and apply topically.
Putri malu	<i>Mimosa pudica</i> L.	Fabaceae	Roots, stems, and leaves	Digestive disorders	Prepare sufficient plant material, boil until the water is reduced, strain, and drink while warm.
Sirih	<i>Piper betle</i> L.	Piperaceae	Leaves	Facilitating menstruation	Boil 3 betel leaves, and drink the decoction twice daily.
				Postpartum <i>ambaian</i>	Boil 3 betel leaves mixed with turmeric and tamarind, then drink the decoction.
Sambiloto	<i>Andrographis paniculata</i> Burn. fil.	Acanthaceae	Leaves	Fever	Prepare 3–4 leaves, brew with hot water in a container, allow to cool, and drink 3 times daily.
Meniran hijau	<i>Phyllanthus niruri</i> L.	Phyllanthaceae	Roots, stems, and leaves	Gastritis	Boil 3 whole plants (roots, stems, and leaves) in 2 glasses of water until reduced to 1 glass. Strain and drink while warm.
Semanggi	<i>Marsilea drummondii</i> L.	Marsileaceae	Roots, stems, and leaves	Cholesterol	Boil 4 whole plants (roots, stems, and leaves) or a handful in 2 glasses of water until reduced to 1 glass. Strain and drink while warm.
Kemangi	<i>Ocimum basilicum</i> L.	Lamiaceae	Leaves	<i>Sarampa</i>	Boil sufficient basil leaves with bay leaves, strain into a glass, and drink while warm.
Kunyit	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	Wounds	Prepare sufficient turmeric, wash, crush or grind, and apply to the wound.
Jahe	<i>Zingiber officinale</i> Roscoe.	Zingiberaceae	Rhizome	Diabetes	Boil approximately 2 thumb-sized pieces of thinly sliced ginger in 2 glasses of water until reduced to 1 glass. Strain and drink while warm with a small amount of honey.
Serai	<i>Cymbopogon citratus</i> L.	Poaceae	Stem	Cough	Boil 2 stalks of lemongrass and 1 thinly sliced segment of ginger in 2 glasses of water until reduced to 1 glass. Strain and drink while warm with a small amount of honey.
Sirsak	<i>Annona muricata</i> L.	Annonaceae	Leaves	Headache	Prepare 3 soursop leaves, crush or grind, and apply to the forehead as a compress.
Bawang putih	<i>Allium sativum</i> L.	Amaryllidaceae	Bulb (clove)	Toothache	Prepare 1–2 cloves of garlic, slice thinly, and brew in hot water. When the water becomes warm, use it as a mouth rinse twice daily.
Pepaya	<i>Carica papaya</i> L.	Caricaceae	Leaves	Fever	Prepare 3 papaya leaves, crush or squeeze them, add a small amount of warm water, extract the juice, and drink at night.
Seledri	<i>Apium graveolens</i> L.	Apiaceae	Roots, stems, and leaves	Hypertension	Boil 3 whole plants (roots, stems, and leaves) in 2 glasses of water until reduced to 1 glass. Strain and drink twice daily while warm.
Kelapa	<i>Cocos nucifera</i> L.	Arecaceae	Fruit (water)	Fever	Collect the water from a fresh young coconut and drink directly without added sugar or sweeteners.
Kelor	<i>Moringa oleifera</i> Lam.	Moringaceae	Leaves	Eye disorders	Squeeze sufficient moringa leaves in a container of clean boiled water, strain through a fine cloth, and use to rinse or instill into tired, red, or irritated eyes.
Meniran merah	<i>Phyllanthus urinaria</i> L.	Phyllanthaceae	Roots, stems, and leaves	Heart disease	Prepare 2 whole plants (roots, stems, and leaves), boil in 1 glass of water until reduced to 1/2 glass. Strain and drink while warm.

The identification of medicinal plants in Bou Village recorded 24 medicinal plant species, comprising 2 divisions, 3 classes, 17 orders, 22 genera, and 18 families. This differs from the findings of Siaman (2024), who reported a greater number of medicinal plant species in Pakuli Village, Gumbasa District, namely 49 species. This difference may be attributed to the greater diversity of plants in Pakuli Village that are believed to treat various diseases, as well as the existence of a community service program aimed at helping local residents conserve medicinal plant biodiversity in home gardens. In contrast, Bou Village has not yet implemented any specific conservation efforts, and knowledge of medicinal plant uses remains largely confined to older community members. By comparison, Fadilah et al. (2025) reported only 20 medicinal plant species used by the Kaili ethnic community in Sipi Village. This may be because the study in Sipi Village focused on a single ethnic group, whereas the present study in Bou Village included the broader community, consisting mainly of the Kaili, Bugis, and Mandar ethnic groups, all of whom possess knowledge of medicinal plants.

Based on growth habit, the 24 medicinal plant species identified in this study can be classified into herbs, shrubs, small trees, and trees. Herbaceous plants were the most dominant, with 15 species, followed by trees with 4 species, small trees with 3 species, and shrubs with 2 species. This finding is consistent with Hasan & Kaspul (2025), who reported that most medicinal plants used by the Dayak Meratus community were also dominated by herbs, totaling 24 species.

The plant parts used medicinally by the people of Bou Village were highly diverse, with nearly all plant organs being utilized. Based on Table 1, leaves were the most frequently used plant part, accounting for 11 species, followed by the combined use of roots, stems, and leaves in 5 species, rhizomes in 3 species, fruits in 2 species, sap in 1 species, stems in 1 species, and cloves (bulbs) in 1 species. The dominance of leaves as medicinal material is likely due to their easier accessibility and simpler preparation compared with other plant parts. This result is in agreement with Lestari et al. (2021), who showed that leaves were the plant part most commonly used as medicine in home gardens in North Dumoga District, totaling 26 species. This pattern is related to the ease of obtaining leaves and their practicality in medicinal preparation.

The medicinal plants used by the community exhibited diverse therapeutic benefits for treating various diseases. Several plants showed particularly notable uses. For example, *Curcuma zedoaria* (Christm). Roscoe. (white turmeric), which is used by the community, was reported to be effective in the treatment of breast cancer and cysts. This is supported by Fitriana et al. (2023), who found that the ethanol extract of *Curcuma zedoaria* Christm. exhibited anticancer activity against T47D breast cancer cells by inhibiting cell proliferation through an apoptotic mechanism. Song et al. (2025) also demonstrated that *Curcuma zedoaria* (Christm). Roscoe. extract inhibited the proliferation, migration, and invasion of SK-OV-3 ovarian cancer cells and promoted cancer cell apoptosis. Other plants with similar community-reported benefits include *Kalanchoe pinnata*, *Andrographis paniculata* Burn. fil., *Carica papaya* L., and *Cocos nucifera* L., all of which are used to treat fever. *Cymbopogon citratus* L. and *Citrus x macrocarpa* Bunge. are used by the community as cough remedies, which is supported by Suwistika dan Mushoffa (2023), who demonstrated that citrus can relieve cough. *Mimosa pudica* L. and *Psidium guajava* L. are used for digestive disorders, and this is supported by Zulfiana & Nurul (2022), who reported that guava leaves are used in traditional medicine because their tannin, flavonoid, essential oil, and alkaloid contents make them effective as a natural antidiarrheal remedy.

Other medicinal plants were reported to have different therapeutic uses. *Strobilanthes crispa* L. is used to treat kidney stones, *Orthosiphon aristatus* Blume. for

urinary tract infections, *Plectranthus scutellarioides* L. for hematemesis, *Piper betle* L. to facilitate menstruation and as a remedy for postpartum *ambaian*, *Phyllanthus niruri* L. for gastritis, *Marsilea drummondii* L. for cholesterol-related complaints, *Ocimum basilicum* L. for *sarampa*, *Curcuma longa* L. for wounds, *Zingiber officinale* Roscoe. for diabetes, *Annona muricata* L. for headache, *Allium sativum* L. for toothache, *Apium graveolens* L. for hypertension, *Moringa oleifera* Lam. for eye disorders, *Phyllanthus urinaria* L. for heart disease, and *Jatropha curcas* L. for aphthous ulcers. These uses are supported by Dermawan et al. (2021), who demonstrated that *Jatropha curcas* L. leaves can treat aphthous ulcers because they contain active compounds such as saponins, tannins, and flavonoids, which play important roles in the wound-healing process.

Based on interviews with several residents of Bou Village, the most commonly practiced method of preparing medicinal plants was boiling, which was recorded for 11 species: *Strobilanthes crispa* L., *Orthosiphon aristatus* Blume., *Mimosa pudica* L., *Piper betle* L., *Phyllanthus niruri* L., *Marsilea drummondii* L., *Ocimum basilicum* L., *Zingiber officinale* Roscoe., *Cymbopogon citratus* L., *Apium graveolens* L., and *Phyllanthus urinaria* L. This finding is consistent with Nomleni et al. (2021), who reported that people in Huilelot and Uiasa Villages, Semau District, Kupang Regency, most commonly processed medicinal plants by boiling. In addition, 7 species were prepared by crushing or squeezing, namely *Plectranthus scutellarioides* L., *Kalanchoe pinnata* Lam., *Curcuma longa* L., *Annona muricata* L., *Carica papaya* L., *Moringa oleifera* Lam., and *Psidium guajava* L. Three species were prepared by brewing, namely *Curcuma zedoaria* (Christm). Roscoe., *Andrographis paniculata* Burn. fil., and *Allium sativum* L. Two species were consumed directly from the fruit, namely *Cocos nucifera* L. and *Citrus x macrocarpa* Bunge. One species, *Jatropha curcas* L., was applied topically using its sap. This is supported by Anam et al. (2022), who reported that the Dondo ethnic community in Ogodeide District, Toli-Toli Regency, most frequently processed medicinal plants by boiling, squeezing, crushing, and cutting.

## CONCLUSION

Based on the findings of this study, it can be concluded that the community in Bou Village utilizes 24 medicinal plant species belonging to 18 families. The methods of preparation include boiling, brewing, pounding/squeezing, grating, instillation, topical application, and direct consumption. The plant parts used comprise leaves, rhizomes/roots, whole plants, stems, fruits, and sap. These medicinal plants are used to treat a wide range of conditions, including fever, digestive disorders, cough, kidney stones, urinary tract infections, breast cancer, cysts, hematemesis, boils, menstrual irregularities, *ambaian*, high cholesterol, *sarampa*, wounds, diabetes, headache, toothache, hypertension, eye disorders, heart disease, and oral ulcers.

## RECOMMENDATION

Based on the results of this study, further research is recommended to investigate the chemical constituents of the identified medicinal plant species in order to strengthen the scientific evidence supporting their therapeutic properties. In addition, support from the Bou Village government is expected in providing dedicated land for the cultivation of local medicinal plants as a means of preserving local wisdom while also serving as an easily accessible source of alternative medicine for the community through a "Village Living Pharmacy" (*Apotek Hidup Desa*).

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