



## Ethnobotanical Study on the Utilization of Medicinal Plants by the Community of Gilireng Regency, South Sulawesi

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### ABSTRACT

This study aims to describe the use of traditional medicinal plants by the people of Gilireng Regency, South Sulawesi. Data were obtained through structured interviews with five informants who have experience using medicinal plants. The results showed that the five main plants frequently used are bay leaves (*Syzygium polyanthum*), guava (*Psidium guajava L.*), soursop (*Annona muricata L.*), cat's whiskers (*Orthosiphon aristatus*), and lemongrass (*Cymbopogon citratus*). Each plant contains different active compounds, such as eugenol and kaempferol, which are believed to treat various complaints such as fever, diarrhea, headaches, and high blood pressure. This knowledge has been passed down from generation to generation and is still used today. This research is the first step in preserving local knowledge for the development of nature-based medicine.

Keywords: Ethnobotany, medicinal plants, traditional medicine, Gilireng

### I. INTRODUCTION

The use of medicinal plants has long been an important part of traditional medicine practices in Indonesia. As a country with a high level of biodiversity, Indonesia boasts a variety of plant species that have been empirically utilized by communities for medicinal purposes. The use of various types of plants in daily life has been ongoing for generations and encompasses various aspects, such as medicine, beauty treatments, spiritual practices, and as a local food source. Many people believe that these plants are effective in treating various diseases, are safe to consume, and are relatively affordable. This belief is reflected in the widespread use of herbal-based traditional medicine that continues to grow in society (Tahar *et al.*, 2024)

Various ethnobotanical studies have been conducted in several regions in Indonesia. Research conducted in West Sulawesi shows that local communities still maintain traditional knowledge in utilizing medicinal plants as part of their daily lives (Syamsiah *et al.*, 2021). Furthermore, research among the Bugis people in Bone Regency, South Sulawesi, shows that various types of plants are used as traditional medicines, such as noni, starfruit, banana, moringa, and cat's whiskers, with parts used including the fruit, leaves, and rhizomes (Syamsuri *et al.*, 2023). However, studies on the use of medicinal plants at the local level, particularly in Gilireng District, South Sulawesi, are still limited and have not been scientifically documented.

Based on the results of interviews conducted in Gilireng District, information was obtained that there are five types of medicinal plants that are often used by the community, namely bay leaves (*Syzygium polyanthum*), guava (*Psidium guajava*) and guava leaves (*Psidium guajava* L.), soursop (*Annona muricata* L.), cat's whiskers (*Orthosiphon aristatus*), and lemongrass (*Cymbopogon citratus*). These plants are used to treat various health complaints, such as fever, headaches, urinary tract disorders, and hypertension, demonstrating that local knowledge still plays a vital role in maintaining public health.

This study aims to identify and describe the types of medicinal plants used by the people of Gilireng District and to understand how they are used in traditional medicine. The results are expected to form the basis for the development of natural-based traditional medicines and support efforts to preserve local knowledge and biodiversity in Indonesia.

## II. METHOD

This study used a qualitative approach with a descriptive approach to describe the use of medicinal plants by the community. The study was conducted in Gilireng District, South Sulawesi, on June 8, 2025. The study subjects consisted of five informants from the local community who had experience and knowledge in using medicinal plants. Informants were selected using a purposive sampling technique, based on certain criteria, such as experience in using medicinal plants to address health problems.

Data collection was conducted through structured interviews with open-ended questions covering the types of medicinal plants used, their benefits or uses, how they are processed or used, and the effects experienced after use. Interviews were conducted directly with informants to obtain in-depth and accurate data. The data obtained were then analyzed using qualitative descriptive analysis techniques, namely by reducing data, presenting data, and drawing conclusions based on the patterns of medicinal plant use identified. The results of the analysis are presented in the form of a systematic scientific narrative.

## III. RESULTS AND DISCUSSION

Medicinal plants are plants empirically believed to possess pharmacological activity in helping to cure various diseases. They can be used directly or through processing such as boiling, grinding, or topical application. All plant organs have the potential to be used as medicinal ingredients, including roots, stems, leaves, flowers, fruits, and other additional parts containing bioactive compounds (Syamsiah *et al.*, 2021).

Despite the availability of modern treatments, local communities still rely on traditional medicinal plants because they are more affordable and have fewer side effects. To identify the types of medicinal plants commonly used by the community, interviews were conducted with several informants to determine their preferences for certain medicinal plants based on their daily experiences.

Based on the results of interviews with five informants in Gilireng District, five types of medicinal plants were obtained that were most frequently used, namely bay leaves (*Syzygium polyanthum*), guava (*Psidium guajava* L.), soursop (*Annona muricata* L.), cat's whiskers (*Orthosiphon aristatus*), and lemongrass (*Cymbopogon citratus*). The use of these plants is based on the empirical experience of the community in dealing with various health complaints.

**Table 1.** Plants Used as Medicine by the Gilireng District Community

No.	Plant Name	Scientific Name	Parts Used	Organic Compound Content	Benefits
1	Bay leaf	<i>Syzygium polyanthum</i>	Leaf	Eugenol	Fever

2	Guava	<i>Psidium guajava L.</i>	Leaf	Kaempferol	Diarrhea
3	Soursop	<i>Annona muricata L.</i>	Leaf	Kaempferol	Relieves headaches and lowers high blood pressure
4	Cat whiskers	<i>Orthosiphon aristatus</i>	Leaf	Kaempferol	Treats urinary tract disorders and relieves high blood pressure
5	Lemongrass	<i>Cymbopogon citratus</i>	Stem	Eugenol	Relieve headaches

The results showed that the most commonly used part of the plant is the leaves, with simple processing methods such as boiling. This is consistent with previous research, which found that leaves are the most frequently used part due to their high secondary metabolite content and ease of processing (Wahyudi *et al.*, 2024). However, this study found variations in topical use, reflecting the uniqueness of local practices. This suggests that people tend to choose methods that are practical and easy to implement in their daily lives.

Informants used bay leaves to reduce fever by compressing them with coconut water. The effects felt after use were a feeling of cooler skin, a decrease in body temperature, and a gradual increase in sweating. This contrasts with previous research, which generally used bay leaves in a boiled form for drinking (Wahyudi *et al.*, 2024). The Gilireng community predominantly uses them topically. This difference suggests local adaptations in the use of medicinal plants.

Guava leaves are used by informants to treat diarrhea by consuming boiled water from the leaves. The effect is a feeling of relief in the stomach and a gradual reduction in bowel movements. This use aligns with research by Nastiti *et al.* (2025), which states that guava leaves have antidiarrheal properties due to their active compounds such as tannins, flavonoids, saponins, and essential oils, which have antimicrobial properties and can reduce fluid secretion in the intestines. This demonstrates that this community practice has a scientific basis.

Soursop leaves are used by informants to relieve headaches and lower high blood pressure. Informants stated that after consuming soursop leaf decoction, their body felt lighter, their headaches lessened, their sleep improved, and their blood pressure gradually decreased. These findings support previous research that found soursop leaves to have antioxidant activity and that soursop leaf decoction has good effectiveness on blood glucose (Andesmora *et al.*, 2023). However, in this study, the emphasis was placed more on the direct experiences experienced by users.

Informants use cat's whiskers leaves to facilitate urination and help lower high blood pressure. Informants stated that after consuming cat's whiskers leaves, the body feels lighter, urination becomes smoother, and blood pressure becomes more stable if consumed regularly. This use aligns with research by Rizvi *et al.* (2025), which states that cat's whiskers have a diuretic effect. This demonstrates the congruence between traditional knowledge and scientific research findings.

Informants used lemongrass to treat headaches through compresses. They reported a relaxing effect, with headaches gradually decreasing after use. This aligns with research by Damawiyah & Kamariyah (2022), which found that the aroma of lemongrass oil can help relieve headaches. The eugenol content in lemongrass oil has activities similar to aspirin, including preventing platelet aggregation and stimulating the release of serotonin, which plays a role in providing a relaxing effect.

Culturally, the use of medicinal plants in Gilireng District is heavily influenced by traditions passed down through generations. Knowledge of plant species and their processing methods is acquired from family or the surrounding community. Furthermore, economic factors and ease of access are key reasons people choose traditional medicine. Medicinal plants

are considered more affordable, readily available, and have relatively fewer side effects than modern medicine.

Overall, the results of this study indicate that the use of medicinal plants by local communities is not only based on empirical experience but also aligns with scientific findings. However, there are variations in usage methods, indicating the influence of local culture on traditional healing practices.

#### IV. CONCLUSION

This study shows that the people of Gilireng District still utilize medicinal plants as traditional medicine, especially bay leaves (*Syzygium polyanthum*), guava (*Psidium guajava* L.), soursop (*Annona muricata* L.), cat's whiskers (*Orthosiphon aristatus*), and lemongrass (*Cymbopogon citratus*). Utilization is dominated by the leaves with simple processing methods, and is influenced by local knowledge passed down from generation to generation. This practice also shows conformity with scientific findings, although there are variations in their use. Further research is recommended to scientifically test the effectiveness of medicinal plants through quantitative approaches and laboratory analysis, as well as examine more deeply the role of culture in their utilization.

#### V. CONFESSION

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