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ETHNOBOTANICAL STUDY OF TRADITIONAL MEDICINAL PLANTS AND THEIR UTILIZATION IN PASSI VILLAGE, WEST PASSI DISTRICT, BOLAANG MONGONDOW REGENCY

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Abstract

Ethnobotany is the study of the relationship between plants and humans, including the use of plants by local communities. Traditional medicinal plants are plants that are often used by local communities for their health benefits. This study aims to describe the types of medicinal plants used and how they are processed using traditional methods in the village of Passi, West Passi subdistrict, Bolaang Mongondow district. This research is descriptive qualitative with an interview method and descriptive analysis technique. The results of this study show that there are 37 types of medicinal plants used with a total of 23 families found. The methods of processing traditional medicinal plants are: boiling, squeezing, soaking, pounding, and not processing. The most commonly used processing method is boiling, with 24 types of medicinal plants using this method. The parts of the plants that are most commonly used are: stems, fruits, flowers, leaves, roots, gel, sap, rhizomes, and tubers. The most commonly used parts are leaves, rhizomes, and fruits.

Keywords: Passi Village, Ethnobotany, Traditional Medicinal Plants.

INTRODUCTION

Indonesia is one of the countries with the greatest biodiversity in the world. Indonesia is a country with abundant natural resources, including a diversity of plants. It is estimated that there are 30,000 species in Indonesia, 940 of which have benefits that can be used in traditional medicine. Medicinal plants are plants that have medicinal benefits, used to treat illnesses, boost the immune system, and help cure certain diseases (Nuraini Safrida, 2021).

Medicinal plants can be used effectively to obtain their benefits and can be passed down to future generations to preserve existing cultural heritage. With the existence of cultural heritage regarding medicinal plants, the community can continue to use medicinal plants as a traditional method of treatment (Sari, 2023). In the medical world, medicinal plants can be interpreted as plants that have health benefits for the body due to the presence of phytochemical compounds that can help fight diseases in the.

Indonesian society has long used medicinal plants as a method of healing, and this has been done since ancient times before the advent of chemical medicine. Indonesians can use plants as a method of

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healing, boosting immunity, and alleviating various diseases. Medicinal plants used in traditional medicine are used directly and also processed to obtain their benefits (Komariah et al., 2023).

Ethnobotany is a science that teaches about the relationship between plants and humans, which has implications for how humans utilize plants and also how humans care for and preserve these plants so that they can continue to be utilized (Anoor, 2025). Ethnobotany provides an overview of how plants can be used by communities to produce valuable and useful items such as food, clothing, and medicine. The study of medicinal plant ethnobotany discusses traditional medicinal plants with the aim of obtaining information about plants that have health benefits that are often used by communities from generation to generation for the treatment of diseases, as well as understanding how a community perceives traditional medicinal plants and exploring the culture of a community that uses traditional medicinal plants.

Traditional medicinal plants are medicines obtained from plants that are processed using traditional methods to treat diseases. In traditional processing methods, people usually use simple methods such as boiling and pounding traditional medicinal plants. Traditional medicines are still often used by people to treat diseases. The use of medicinal plants has been passed down from generation to generation and is part of a preserved culture (Eurika et al., 2024). Traditional medicines take longer to heal than chemical medicines. There is public concern about the side effects of chemical medicines when taken continuously, so people prefer traditional herbal medicines (Nurcahyani et al., 2024).

People living in rural areas often use plants for traditional medicine, which is possible because the ecosystem is well preserved and the plants are abundant. One area where natural resources are still abundant due to the community's habit of preserving and protecting them is the village of Passi, West Passi subdistrict, Bolaang Mongondow Regency. The Passi village community's habit of utilizing traditional medicinal plants is not in line with the available information on traditional medicinal plants due to the lack of data, whether it be research or writings discussing the types of medicinal plants and their taxonomy. Therefore, this study will examine the traditional medicinal plants used by the Passi village community and how they are utilized as traditional medicine.

RESEARCH METHODS

The research was conducted in Passi Village, West Passi Subdistrict, Bolaang Mongondow Regency. Data was collected through preliminary observation and interviews with key informants (the village head) to identify potential medicinal plants. This was followed by snowball sampling to obtain recommendations from additional informants (village residents) who understood and had used medicinal plants. The interviews were conducted using a questionnaire with questions about the use of plants as traditional medicine and the parts of plants used for medicinal purposes, as well as the health benefits of these traditional medicinal plants. Data analysis was conducted using descriptive qualitative methods by compiling data in tabular form and describing the types and parts of medicinal plants used and how traditional medicinal plants are used based on the interview results, as well as determining the classification of traditional medicinal plants through a literature study (Aldi, 2022).

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RESULTS AND DISCUSSION

From the results of research and interviews conducted, it was found that there are 37 plant species consisting of 23 different families used as traditional medicine by the people of Pasi Village, West Passi District.

Table 1. Traditional medicinal plants in Passi Village, West Passi Subdistrict, Bolaang Mongondow Regency

No	Family	Scientific Name	Name	Parts used	Processing Method	How to use	Benefit
1	*Asteraceae*	*Ageratum conyzoides L*	Billygoat weed (Tongit)	Leaf	Pounded	Smeared	Burned, scratched
2	*Basellaceae*	*Anredera cordifolia (Ten) Steemis*	Maderia vine (Binahong)	Leaf	Boiled	Drunk	Maintain blood pressure, diarrhea, fever
3	*Amaryllidaceae*	*Allium sativum*	Garlic (Bawang Putih)	Tubers	Soaked	Drunk	High blood pressure
4	*myrtaceae*	*Syzygium aromaticum*	Clove (Cingkeh)	Flower	Unprocessed	Consumed Directly	Toothache
5	*Crassulaceae*	*Kalanchoe pinnata*	Cathedral Bells (Cakar bebek)	Leaf	Boiled	Drunk	Wounds, Diarrhea, Fever
6	*Asteraceae*	*Vernonia amygdalina*	African leaves (Daun Afrika)	Leaf	Boiled	Drunk	Lowering cholesterol, high blood pressure, diabetes
7	*Malvaceae*	*abelmoschus manihot L.*	Gedi (Gedi)	Leaf	Boiled	Drunk	Helps Digestion
8	*Zingiberaceae*	*Zingiber officinale Roscoe*	Ginger (goraka)	Rhizomes	Boiled	Drunk	Fever, Cough, Internal Heat
9	*Zingiberaceae*	*Zingiber officinale var. Rubrum*	Red ginger (Goraka merah)	Rhizomes	Boiled	Drunk	Cough, improve The immune system
10	*Myrtaceae*	*Psidium guajava L.*	Guava (Jambu biji)	Leaf	Pounded	Drunk	Diarrhoea
11	*Rutaceae*	*Citrus aurantifolia (Cristm) Swingle*	Lime (Lemong nipis)	Fruit	Squeezed	Drunk	Flu and Cough
12	*Euphorbiaceae*	*Jatropha curcas L.*	Barbados nut (Malacai)	Sap	Unprocessed	Smeared	Scratch wounds
13	*Euphorbiaceae*	*Jatropha gossypifolia (L.) Pohl*	Red jatropha (Malacai merah)	Leaf	Boiled	Drunk	stomach ache
14	*Lamiaceae*	*Orthosiphon spicatus (Blume) Miq*	Cat whiskers (Kumis kucing)	Leaf	Boiled	Drunk	Cough, fever
15	*Zingiberaceae*	*Curcuma longa L.*	Turmeric (kuning)	Rhizomes	Boiled	Drunk	Cough, fever, energizing
16	*Arecaceae*	*Cocos nucifera L.*	Coconut (Bango)	Leaf	Unprocessed	Drunk	Uric acid, maintaining immunity
17	*Lamiaceae*	*Ocimum sanctum L.*	Basil (Kokuru)	Leaf	Pounded	Drunk, rubbed	Toothache, cough and flu, fever, wounds
18	*Lamiaceae*	*Ocimum basilicum 'Purpurascens*	Red basil (Kokuru merah)	Leaf	Pounded	Drunk	Fever, Cough
19	*Polygonaceae*	*Persicaria minor Huds*	Kesum (Kesum)	Leaf	Boiled	Drunk	Treating ulcers

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20	*Moringaceae*	*Moringa oleifera L.*	Moringa (Kelor)	Leaf	Boiled	Drunk	Lowering blood pressure
21	*Verbenaceae*	*Clerodendrum minahassae L*	Leilem (Bonata)	Leaf	Boiled	Drunk	Gastric acid, ulcers
22	*Xanthorrhoeaceae*	*Aloe vera L.*	Aloe vera (Lidah buaya)	Gel	Unprocessed	Smeared	Hair loss
23	*Zingiberaceae*	*Alpinia galanga (L.) Willd*	Galangal (Lengkuas)	Rhizomes	Boiled	Drunk	Increase body immunity
24	*Lamiaceae*	*Coleus Scutellaroides Benth.*	Mayana (Mayana)	Leaf	Pounded	Drunk	Cough with phlegm
25	*Rubiaceae*	*Morinda citrifolia L.*	Noni (Mengkudu)	Fruit	Unprocessed	Consumed Directly	Cough
26	*Bromeliaceae*	*Ananas comosus L.*	Pineapple (Nanasi)	Fruit	Unprocessed	Consumed Directly	Helps Digestion
27	*Pandanaceae*	*Pandanus amaryllifolius Roxb.*	Screwpine leaves (Pandan)	Leaf	Boiled	Drunk	Lowering blood pressure
28	*Caricaceae*	*Carica papaya L.*	Papaya (Popaya)	Leaf	Boiled	Drunk	Malaria
29	*Euphorbiaceae*	*Euphorbia hirta L.*	Asthma plant (Rumput Duku)	Leaves and roots	Boiled	Drunk	Sarampa
30	*Piperaceae*	*Peperomia pellucida*	Pepper elder (Sirih cina)	Leaf	Pounded	Drunk and rubbed	Stomach ache, Burns
31	*Annonaceae*	*Annona Muricata L.*	Soursop (Sirsak)	Leaf	Boiled	Drunk	Lowering blood pressure
32	*Poaceae*	*Cymbopogon citratus L.*	Lemongrass (Sosimbanoy)	Stem	Boiled	Drunk	Fever, Lowers cholesterol levels
33	*Piperaceae*	*Piper betle L.*	Betel leaf (Sirih)	Leaf	Boiled	Drunk	Reduces vaginal discharge
34	*Rubiaceae*	*Myrmecodia platytyrea*	Myrmecodia (Sarang semut)	Stem	Boiled	Drunk	Lowering blood pressure, fever
35	*Acanthaceae*	*Andrographys paniculata L.*	Sambiloto (Sambiloto)	Leaf	Boiled	Drunk	High blood pressure, fever
36	*Zingiberaceae*	*Curcuma xanthorrhiza Robx.*	Javanese ginger (Temulawak)	Leaf	Boiled	Drunk	Cough, Fever
37	*Verbenaceae*	*Lantana camara L.*	Ginger (Lidolidoyo)	Leaf	Boiled	Drunk	Gastric acid, ulcers

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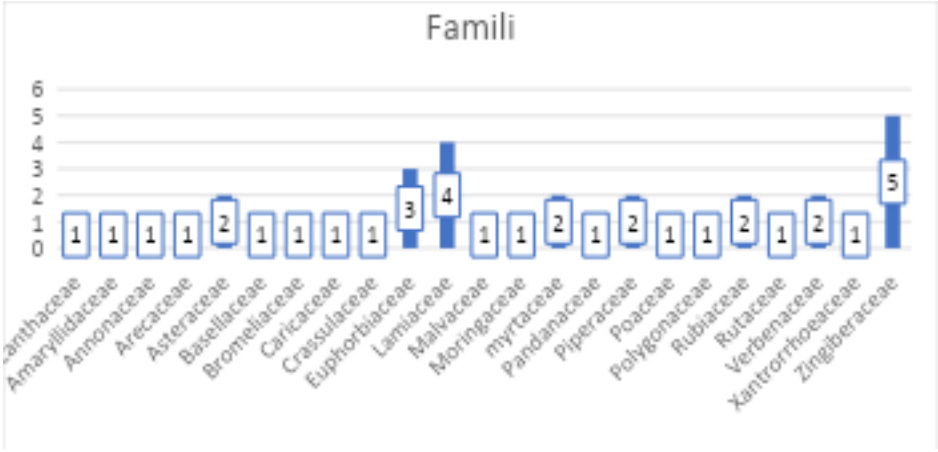

Figure 1. Families of traditional medicinal plants

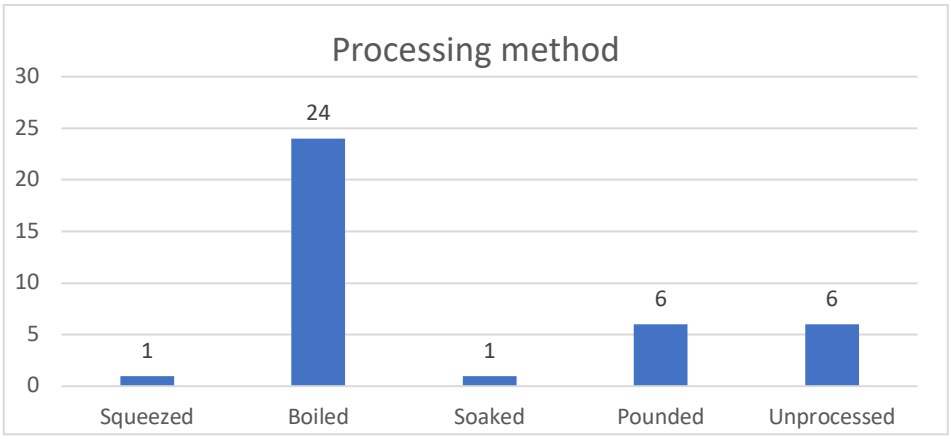

Figure 1. Processing method

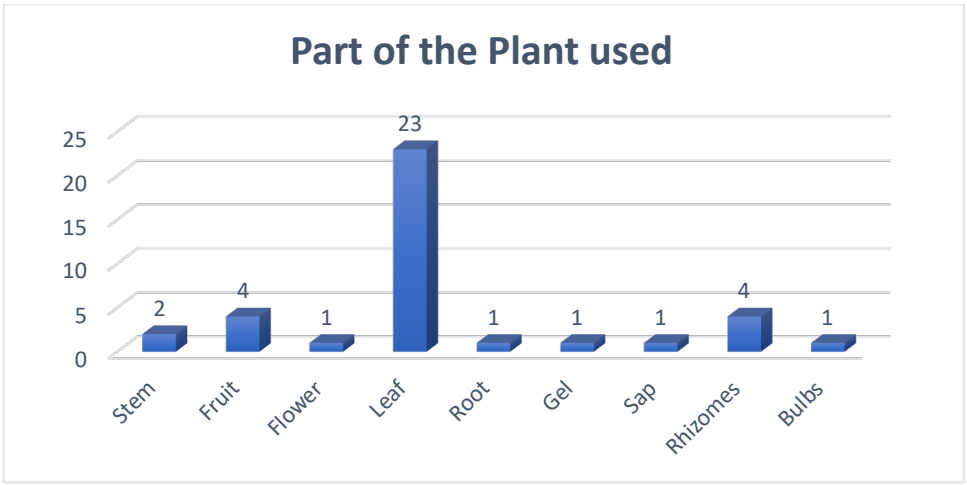

Figure 3. Part of the plant used

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Discussion

Based on (graph 1) above, several types of medicinal plants belonging to the Zingiberaceae, Lamiaceae, and Euphorbiaceae families are widely used as traditional medicines by the Passi Village community. This may be because these types of plants are widely distributed around the yards of residences and gardens belonging to the Passi Village community. The Zingiberaceae family is a family of rhizome plants that are believed to have many health benefits for the body. This is due to the content found in plants belonging to the Zingiberaceae family, such as alkaloids, flavonoids, polyphenols, tannins, quinones, saponins, steroids, and terpenoids. Based on research conducted (Wahidah et al.,2021) In order to identify secondary metabolites in the Zingiberaceae family, it was found that red ginger contains alkaloids and saponins. Then in turmeric there are several compounds such as alkaloids, flavonoids, saponins, and quinones. Then in temulawak there are flavonoids, saponins and quinones. Then in white ginger several compounds such as flavonoids and amilium were found. And next in lempuyang there are flavonoids.

The Lamiaceae family is often used as traditional medicinal plants because they have antioxidant, antimicrobial, antifungal, and anti-inflammatory properties. This is due to several compounds contained in some plants of the Lamiaceae family, such as tannins, saponins, and essential oils. (Putri, 2021)

The Euphorbiaceae family is often used in medicine because it is believed by the community to be able to treat several diseases. This is due to its content, such as alkaloids, triterpenoids, saponins, flavonoids, and phenols (Siregar et al., 2022). Based on research conducted by (Siregar, 2018) which aimed to analyze the phytochemical content in the Euphorbiaceae family, five types of plants were studied and found to contain flavonoids, alkaloids, terpenoids, tannins, and saponins.

Based on (Graph 2) above, it shows that the Passi Village community processes the most traditional medicinal plants by boiling 24 types of medicinal plants, then pounding 6 types of plants, and not processing 6 types of plants. Boiling these medicinal plants is one way to avoid the bitter taste of consuming them directly, and it also sterilizes the plants from germs or bacteria. Boiling also transfers the beneficial substances contained in the medicinal plants into the boiled water (Alakawi et al., 2021).

The grinding method is used because grinding makes the plant easier to use, as grinding makes the plant finer for easier use (Jori, 2016). There are also plants that do not undergo processing and are consumed directly. This is because the part of the plant that is consumed directly is only the fruit, as consuming the fruit provides the body with vitamins, fiber, and minerals contained in the fruit, which are beneficial for the body (Suryana, 2018).

Based on (graph 3) above, it shows that the parts of medicinal plants that are widely used by the Passi Village community as traditional medicine are leaves, rhizomes, and fruits. Leaves are often used as one of the parts to make traditional medicinal plants because they are easy to obtain, and taking only the leaves will not damage the plant as it will grow back. In addition, leaves contain about 70% water and are a source of organic substances that have healing properties (Margarethy et al., 2019).

The rhizome is part of the most numerous family, Zingiberaceae, which is often cultivated for use

as a spice and traditional medicine. The rhizome is often used because it contains active compounds such as flavonoids, saponins, and essential oils consisting of camphene, cineol, cinnamic acid, galangal, galangin, and alpine (Fauzy, 2020). The fruit is also frequently used because it is easily accessible and can be consumed directly. This is because fruits contain at least the fiber, vitamins, and minerals needed by the human body to maintain bodily functions and prevent disease (Yanti et al., 2025).

CONCLUSION

The types of traditional medicinal plants found are quite varied, totaling 37 different plant species belonging to different families, with a total of 23 families found, including: the Acanthaceae family, the Amaryllidaceae family, the Annonaceae family, the Arecaceae family, the Asteraceae family, the Basellaceae family, the Bromeliaceae family, the Caricaceae family, Crassulaceae family, Euphorbiaceae family, Lamiaceae family, Malvaceae family, Moringaceae family, Myrtaceae family, Pandanaceae family, Piperaceae family, Poaceae family, Polygonaceae family, Rubiaceae family, Rutaceae family, Verbenaceae family, Xanthorrhoeaceae family, and Zingiberaceae family.

The methods used by the Passi village community to utilize traditional medicinal plants for traditional medicine vary considerably, including processing methods such as squeezing, boiling, soaking, pounding, and not processing at all. The most commonly used processing methods are boiling, pounding, and not processing at all.

The parts used for traditional medicinal plants are also quite varied, including stems, fruits, flowers, leaves, roots, gel, sap, rhizomes, and tubers. The most widely used parts are leaves, rhizomes, and fruits.

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