Ethnobotanical Study of Medicinal Plants in Bangbayang Village, Sumedang, West Java.

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Abstract

Ethnobotany can be defined as the study of the utilization of plants in a community, one of which is medicinal plants. The purpose of this research is to understand and identify the types of plants used in medicine and their processing methods by the community in Bangbayang Village, Sumedang, West Java. This study was conducted using qualitative and quantitative data analysis through five stages: observation, interviews, field observations, identification, and documentation. Based on interviews with 35 respondents, the diversity of medicinal plants obtained in the forest area of Bangbayang Village is 65 species from 38 families. These medicinal plants are utilized as traditional remedies, serving as alternatives and initial steps for treatment and care, which can be obtained directly from home gardens, community cultivation, or the forest. In this study, the most utilized plants as medicine belong to the Zingiberaceae family, with 6 species. The most commonly used plant parts are leaves, and the most common processing method is boiling. Using the Use Value (UV) calculation, Javanese tamarind, guava, and green betel show the highest UV values at 0.20. Meanwhile, in the calculation of Fidelity Level (FL), turmeric shows the highest FL value at 100%.

Keywords: Bangbayang Village, Ethnobotany, Fidelity Level. Medicinal Plants, Use Value

INTRODUCTION

Indonesia is an archipelagic country with more than 17,000 islands, comprising 50 types of ecosystems and hosting 25,000-30,000 plant species. The country is home to around 300-700 ethnic groups scattered from Sabang to Merauke (Silalahi, 2015). The ethnic diversity in Indonesia results in distinct cultural, traditional, and local wisdom variations among different ethnic groups. One of the local wisdoms possessed by the Indonesian ethnic groups is the utilization of plants in their surroundings. Every local community utilizes plants to meet their daily needs (Fabricant and Farnsworth, 2001).

Ethnobotany is a science that studies the relationship between humans and plants. Ethnobotany can also be interpreted as the science that explores the traditional use of plants,

including medicinal uses. Ethnobotany can be utilized as a field of study to apply the knowledge of traditional communities that have been using various plant species to support their livelihoods (Robi et al., 2019). According to Utami et al. (2019), ethnobotany encompasses the inheritance of life experiences, indigenous knowledge, and local wisdom regarding the use of plants passed down from the ancestors of a community. The discipline of ethnobotany is closely associated with the dependency of humans on plants, both directly and indirectly, to fulfill their life needs (Walujo, 2009).

The utilization of plants by local communities is typically for food, medicine, construction, dyes, fiber sources, rituals, ornaments, and other benefits. This local knowledge is generally passed down orally, limiting it to specific communities, even though more than 80% of the utilization of medicinal plants in the pharmaceutical industry is adapted from local knowledge (Fabricant and Farnsworth, 2001). According to Nisyapuri et al. (2018), community knowledge regarding the use of plants as medicine is often limited to traditional inherited knowledge.

The exposition of ethnobotany must be revealed about the community's perspective (emic) and then, by principles, be substantiated from a scientific background (etic) based on a scientific standpoint. The emic approach aims to obtain data regarding the community's knowledge about the observed object from their perspective and language, without necessarily testing its truth (Martin, 1995); (Rugayah et al., 2004); (Chevalier et al., 2014). The interconnection between nature and humans gives rise to knowledge, value systems, and norms aimed at treating nature well. Therefore, this becomes a value that can be passed down from one generation to the next through the process of socialization (Garna, 1999).

Bangbayang Village is a village located in the Situraja District, Sumedang, West Java. Topographically, Bangbayang Village has a hilly terrain. The elevation of the village's land surface is approximately 745 meters above sea level. Bangbayang Village covers an area of 8.35 square kilometers with a population of 945 people. The majority of the residents of Bangbayang Village are engaged in agriculture and household industries (Imanuddin, 2016).

Bangbayang Village has the potential for the development of medicinal plants. The village possesses a forest with abundant wild plants. Wild plants play a crucial role in the discovery of medicines and serve as a source of highly diverse bioactive molecules that still hold the potential for development as effective traditional medicines. However, limited knowledge and processing of medicinal plants lead to some plants being known and utilized only by a portion of the population.

Based on the background provided, it is necessary to conduct an ethnobotanical study of medicinal plants with the aim of understanding and identifying the types of plants used as medicine and their processing methods by the community in Bangbayang Village, Sumedang, West Java. The calculation of UV (Use Value) and FL (Fidelity Level) is carried out to determine which plants have the highest utility and belief among the community in treating diseases.

METHOD

Study area

The present study was conducted in Bangbayang Village, Sumedang, West Java.

Figure 1. Map of the study area

Data Collection

Fieldwork was carried out from 16 to 22 September 2022. A total of 35 (32 females and 3 males) informants were interviewed in the study area, in which all informants were selected purposively and systematically based on recommendations of knowledgeable elders, and local authorities. All of the informants were local inhabitants. Traditional healers were surely identified as key informants because they were important custodians and participants of indigenous knowledge of medicinal plants. Interestingly, all these traditional healers were females. A few males were also interviewed to examine their medicinal knowledge and opinions. Ethnobotanical investigations were carried out to collect data on medicinal plants used to treat human diseases. The methodological approaches were semi-structured interviews, field observation, and guided field walks. Information was carefully recorded during interviews with each informant. Field observations were performed with traditional healers guided on the morphological features and habitats of each medicinal plant species. The information obtained was cross-checked with the other informants. The list of medicinal plants was collected from fields and gardens.

Data analysis

The ethnobotanical data generated were analyzed using quantitative indices, namely Fidelity Level (FL) and Use Value (UV). This helped to establish a consensus on which species are effective in curing diabetes, as well as the species' relative importance and enables us to understand the extent of the potential utilization of each species.

Use Value (UV)

Use value (UV) demonstrates the relative importance of plants known locally. It was calculated using the following formula (Riadi et al., 2019)

$$UV = \frac{\sum UVis}{ni}$$

Where UV is the number of uses mentioned by each informant for a given species and ni is the total number of informants

Fidelity Level

FL indicates the percentage of informants claiming the use of a certain plant species for the same major purpose. The fidelity level is calculated by the following formula:

$$FL(\%) = \frac{Np}{N} \text{x } 100$$

Np is the number of informants that claimed a use of a plant species to treat a particular disease and N is the number of informants that used plants as a medicine to treat any given disease (Riadi et al., 2019).

Diversity of Medicinal Plants Utilized

Based on the results of interviews with respondents, the diversity of medicinal plants utilized by the community in the Bangbayang Village area amounts to 65 plant species belonging to 38 families. These medicinal plants are used as traditional medicine, serving as an alternative and initial step for treatment and care that can be obtained directly from household gardens, community cultivation areas, or the forest. The medicinal plants used, originating from various tribes, can be seen in the following Figure 2.

Medicinal Plants Used Based on Family Grouping

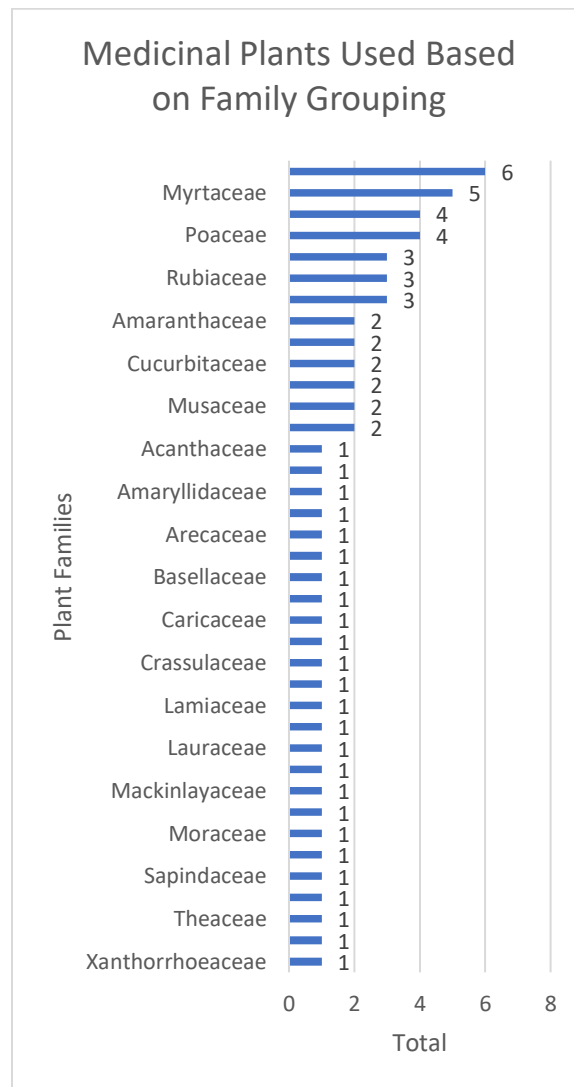| Plant Family	Total
Myrtaceae	6
	5
Poaceae	4
	4
Rubiaceae	3
	3
	3
Amaranthaceae	2
	2
Cucurbitaceae	2
	2
Musaceae	2
	2
Acanthaceae	2
	1
Amaryllidaceae	1
	1
Arecaceae	1
	1
Basellaceae	1
	1
Caricaceae	1
	1
Crassulaceae	1
	1
Lamiaceae	1
	1
Lauraceae	1
	1
Mackinlayaceae	1
	1
Moraceae	1
	1
Sapindaceae	1
	1
Theaceae	1
	1
Xanthorrhoeaceae	1

Figure 2. Medicinal used based on family grouping

Sixty-five species of medicinal plants from 38 families were identified, including Zingiberaceae (6 species), Myrtaceae (5 species), Asteraceae, Poaceae (4 species), Euphorbiaceae, Rubiaceae, Rutaceae (3 species), Amaranthaceae, Araceae, Cucurbitaceae, Fabaceae, Musaceae, Piperaceae (2), and the lowest number of plant types, with only one type each found in the Acanthaceae, Alliaceae, Amaryllidaceae, Apiaceae, Arecaceae, Asparagaceae, Basellaceae, Campanullaceae, Caricaceae, Chloranthaceae, Crassulaceae, Graminae, Lamiaceae, Laminaceae, Lauraceae, Loranthaceae, Mackinclayceae, Menispermaeceae, Moraceae, Phyllanthaceae, Sapindaceae, Solanaceae, Theceae, Thymelaeaceae, and Xanthorrhoeaceae tribes. In 8 families, there are 4 families of plants most commonly utilized, including the Zingiberaceae, Myrtaceae, Asteraceae, and Poaceae families. In the Zingiberaceae family, 6 plants were identified: *Curcuma domestica* Val. (turmeric), *Curcuma caesia* (black turmeric), *Zingiber officinale* (ginger), *Alpinia galanga* (galangal), *Zingiber montanum* (panglai/bangle), and *Kaempferia galanga* (kencur). In the

Myrtaceae family, 5 plants were found, namely *Melaleuca leucadendra* (white wood), *Syzygium aqueum* (water apple), *Syzygium polyanthum* (bay leaf), *Psidium guajava* (guava), and *Syzygium aromaticum (*clove). From the Asteraceae family, 4 plants were identified, namely *Ageratum conyzoides* (goatweed), *Eupatorium odoratum* (kirinyu/scented grass), *Ngai camphor* (sembung), and *Taraxacum officinale* (dandelion). Then, from the Poaceae family, 4 plants were also found: *Gigantochloa atter* (bamboo), *Cymbopogon citratus* (lemongrass), *Imperata cylindrica* (blady grass), and *Dinochloa scandens* (cangkoreh). The results of this research are consistent with a study conducted by Yatias (2016) in the Neglasari Village, Nyalindung District, Sukabumi Regency, West Java Province, where medicinal plants from the Zingiberaceae family are most commonly utilized by the community. This differs from the study conducted by Arham et al. (2016) in the Mataue Village, Lore Lindu National Park area, where four families dominated, including Euphorbiaceae, Lamiaceae, Malvaceae, and Zingiberaceae.

The local knowledge of the population regarding medicinal plants is typically acquired orally through generations. Therefore, the decline in the use of local languages and the lack of young generations learning local knowledge from their ancestors, along with the passing of many elderly generations without passing down local knowledge to the younger generation, can lead to the erosion of local knowledge (Iskandar, 2012; Lizarralde, 2004).

Parts of the Plant Used

The result of interviews with the respondents reveals that the plant parts frequently used as medicine in the Bangbayang Village area include leaves, fruits, stems, rhizomes, roots, latex, tubers, flowers, and seeds, as shown in the following Figure 3.
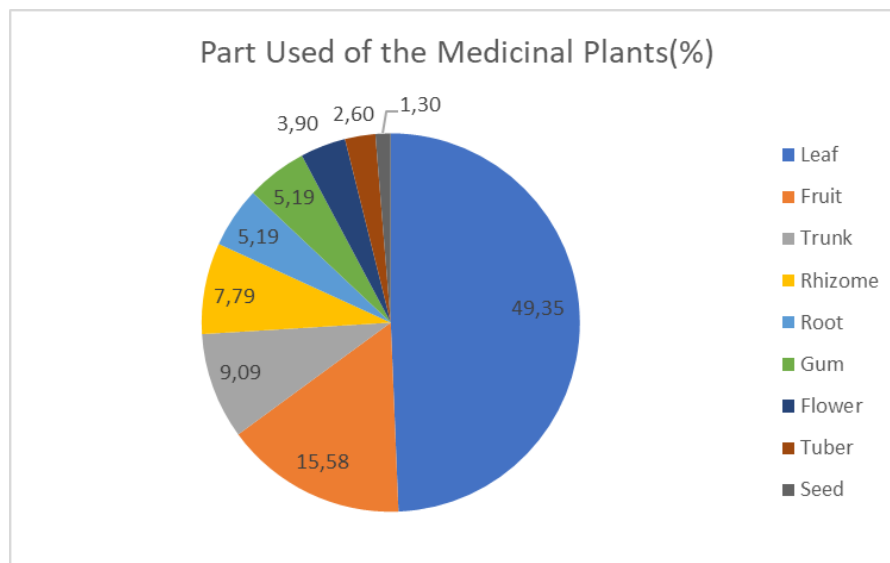

Figure 3. Diagram of Plant Parts Used as Medicine

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Based on Figure 3, it is found that the plant parts used as medicine are leaves for 38 species of plants (49.35%), fruits for 12 species of plants (15.58%), stems for 7 species of plants (9.09%), rhizomes for 6 species of plants (7.79%), roots for 4 species of plants (5.19%), latex for 4 species of plants (5.19%), tubers for 2 species of plants (2.60%), flowers for 3 species of plants (3.90%), and seeds for 1 species of plant (1.30%).

The part of the plant most frequently used by the residents of Bangbayang Village is the leaves. This is because leaves often contain compounds such as tannins and alkaloids, which are beneficial as medicine (Larasati et al., 2019). The leaf organ is abundantly present in nature and easily accessible, and the collection and processing of leaves are considered very easy and simple. The efficacy of leaves is known to have more healing properties compared to other parts of the plant. Handayani (2003) states that leaves are widely used in traditional medicine because they generally have a soft texture, high water content (70-80%), and serve as the accumulation site for photosynthetic products believed to contain elements (organic substances) with healing properties for diseases.

Processing Methods of Medicinal Plants

The results of interviews with respondents regarding the utilization methods of medicinal plants used by residents in the Bangbayang Village area can be seen in Figure 4. There are 28 utilization methods identified, including boiling (27%); mixing and boiling (16%); cutting (11%); pounding (8%); grating (4%); direct consumption (4%); soaking (3%); squeezing (2%); roasting (2%); mixing (2%); pounding and mixing (2%); pounding and brewing (2%); crushing (1%); scraping (1%); burning (1%); grating and brewing (1%); crushing and boiling (1%); rolling (1%); grating, mixing, and boiling (1%); mixing and pounding (1%); cutting and grinding (1%); grinding (1%); roasting, squeezing, and letting it stand (1%); roasting, pounding, and boiling (1%); drying, mixing, and boiling (1%); grating and squeezing (1%); cutting, drying, and boiling (1%); mixing and soaking (1%). (Figure 4).
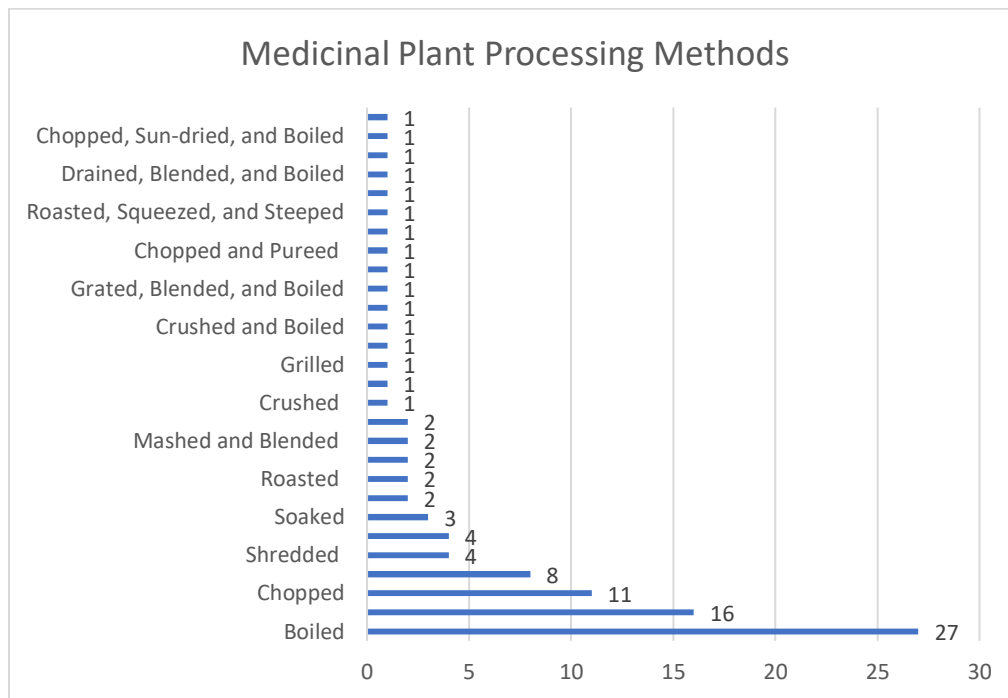
Figure 4. Diagram of how medicinal plants are processed

The most commonly used processing method by the residents of Bangbayang Village is boiling. Boiling is the most frequently employed preparation method by the community. The purpose of boiling is to transfer the beneficial substances from the plants into the water solution, which is then consumed for medicinal purposes. The boiling process can reduce the bitter and astringent taste compared to direct consumption. Additionally, the boiling process is considered more hygienic as it can eliminate pathogenic bacteria (Eni et al., 2019).

Categorization of Medicinal Plants for Treating Diseases

Based on the results of interviews conducted with respondents in the Bangbayang Village area, the community utilizes 65 types of medicinal plants to treat 52 different types of diseases. The medicinal plants used by the Bangbayang Village community are categorized into 10 groups of diseases, consisting of 52 types of diseases, as shown in the following Table 1.

Table 1. Total Plants Utilized for Healing Diseases

No.	Disease Categorization	Types of diseases	medicinal plants
1	Respiratory system diseases	6	17
2	Diseases of the circulatory system	3	12
3	Digestive system diseases	5	11
4	Diseases of the musculoskeletal system and joints	9	16
5	Eye diseases	1	6

6	Pregnancy and women's health issues	5	7
7	Diseases of the urinary and reproductive system	3	3
8	Skin diseases	5	9
9	Endocrine, nutritional, and immune system disorders	8	17
10	Infectious and parasitic diseases	7	13
	Total	52	112

The types of diseases are grouped into 10 categories, including respiratory system diseases, circulatory system diseases, digestive system diseases, musculoskeletal system and joint diseases, eye diseases, pregnancy and women's health issues, urinary and reproductive system diseases, skin diseases, endocrine, nutritional, and immune system disorders, as well as infectious and parasitic diseases.

Table 1 shows the group of respiratory system diseases suffered by the residents of Bangbayang Village that can be treated with a total of 17 types of plants capable of treating cough, flu, asthma, colds, sore throat, and shortness of breath. The types of plants used for treatment include handeuleum (Graptophyllum pictum), garlic (Allium sativum), hanjuang (Cordyline fruticose), jarak pagar (Jatropha curcas), tamarind (Tamarindus indica), haurkoneng (Bambusa vulgaris), galangal (Kaempferia galangal), jackfruit (Artocarpus heterophyllus), white wood (Melaleuca leucadendra), ginger (Zingiber officinale), rambutan (Nephelium lappaceum), lime (Citrus aurantifolia), clove (Syzygium aromaticum), guava (Psidium guajava), betel leaf (Piper betle), bamboo (Gigantochloa atter), and lemongrass (Cymbopogon citratus).

The group of circulatory system diseases can be treated using 12 types of plants capable of treating nosebleeds, hypertension (high blood pressure), and low blood pressure. The types of plants used for treatment include red spinach (*Amaranthus cruentus*), goatweed (*Ageratum conyzoides*), papaya (*Carica papaya*), cucumber (*Cucumis sativus*), chayote (*Sechium edule*), tamarind (*Tamarindus indicus*), avocado (*Persea Americana),* mistletoe (*Loranthus europaeus*), noni (*Morinda citrifolia*), banana (*Musa* sp.), bay leaf (*Syzygium polyanthum*), and betel leaf (*Piper betle*).

The group of digestive system diseases can be treated with a total of 11 types of plants capable of treating stomach ulcers, hemorrhoids, diarrhea, stomachaches, and constipation. The types of plants used for treatment include handeuleum (*Graptophyllum pictum*), papaya (*Carica papaya*), Leucaena (*Leucaena leucocephala*), avocado (*Persea americana*), water apple (*Syzygium aqueum*), guava (*Psidium guajava*), galangal (*Kaempferia galanga*), green tea (*Camellia sinensis*), black turmeric (*Curcuma caesia*), and turmeric (*Curcuma domestica*).

The group of musculoskeletal system and joint diseases can be treated with a total of 16 types of plants capable of treating rheumatism, joint pain, sprains, fractures, gout, paralysis, stiffness, lower back pain, and knee pain. The types of plants used for treatment include dandelion (*Taraxacum officinale*), binahong (*Anredera cordifolia*), papaya (*Carica papaya*), heuras tulang

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(*Chlorantus elatior*), galangal (*Kaempferia galanga*), cat's whiskers (*Orthosiphon aristatus*), bay leaf (*Syzygium polyanthum*), god's crown (*Phaleria macrocarpa*), guava (*Psidium guajava*), betel leaf (*Piper betle*), lime (*Citrus aurantifolia*), lemongrass (*Cymbopogon citratus*), blady grass (*Imperata cylindrica*), ginger (*Zingiber officinale*), and ground cherry (*Physalis angulata*).

The group of eye diseases can be treated with a total of 6 species of plants that can help clear the eyes. The types of plants used for treatment include carrot (*Daucus carota*), *Hippobroma longiflora*, *Coleus scutellarioides*, betel leaf (*Piper betle*), *Piper aduncum*, and *Dinochloa scandens*.

The group of pregnancy and women's health issues can be treated with a total of 7 species of plants that can help facilitate breastfeeding, recover post-delivery, treat vaginal discharge, cleanse the female organs, and alleviate abdominal pain during menstruation. The types of plants used for treatment include katuk (*Sauropus androgynus*), galangal (*Kaempferia galanga*), betel leaf (*Piper betle*), golden pothos (*Epipremnum aureum*), tamarind (*Tamarindus indica*), and *Piper aduncum*.

The group of diseases of the urinary and reproductive system can be treated using 3 types of plants that can help treat kidney stones, kidney failure, and bladder stones. The types of plants used for treatment include green coconut (*Cocos nucifera*), brotowali (*Tinospora tuberculate*), and cat's whiskers (*Orthosiphon aristatus*).

The group of skin diseases can be treated using 9 species of plants that can help alleviate itching, skin rashes, and ringworm, and can also be used as a substitute for massage oil and skin moisturizer. The species of plants used for treatment include turmeric (*Curcuma domestica*), Syngonium sp. (*Syngonium* sp.), Leucaena (*Leucena leucocephala*), jarong (*Achyranthes aspera*), pomelo (*Citrus maxima*), citrus (*Citrus s*p.), bangle (*Zingiber montanum*), tamarind (*Tamarindus indica*), and aloe vera (*Aloe vera*).

The group of endocrines, nutritional, and immune system disorders can be treated using 17 species of plants that can help treat colds, fever, diabetes, internal heat, hepatitis, and colds, as well as to help increase appetite and boost the immune system. The types of plants used for treatment include turmeric (*Curcuma domestica*), lemongrass (*Cymbopogon citratus*), ginger (*Zingiber officinale*), brotowali (*Tinospora tuberculate*), tamarind (*Tamarindus indica*), garlic (*Allium sativum*), shallot (*Allium cepa*), air plant (*Kalanchoe pinnata*), Leucaena (*Leucena leucocephala*), cassava (*Manihot esculenta*), citrus (*Citrus sp.*), heuras tulang (*Chlorantus elatior*), mistletoe (*Loranthus europaeus*), guava (*Psidium guajava*), gardenia (Gardenia jasminoides), aloe vera (Aloe vera), and bamboo (*Bambusa vulgaris*).

The group of infectious and parasitic diseases can be treated using 13 types of plants that can help fade scars, heal external wounds, close wounds, stop bleeding, fade scars, and treat toothaches, and cavities. The types of plants used for treatment include turmeric (*Curcuma domestica)*, physic nut (*Jatropha multifida*), banana fibers (*Musa textilia*), guava (*Psidium guajava*), coffee (*Coffea canepora*), gotu kola (*Centella asiatica*), banana (*Musa* sp.), goatweed (*Ageratum conyzoides*), Syngonium sp. (*Syngonium* sp.), galangal (*Alpinia galanga*), kirinyu (*Eupatorium odoratum*), jatropha (Jatropha curcas), and betel leaf (*Piper betle).*

The results of this research are more or less similar to the study conducted by Eni et al. (2019) among the Hindu community in Jagaraga Village, West Lombok Regency, West Nusa Tenggara, where the community uses plants to treat eye diseases, wounds, itching, chickenpox, cough, fever, headache, internal diseases, stomach ulcers, internal heat, dysentery, bad breath, hypertension, post-delivery care, and urinary tract infections. This data also indicates the types of diseases frequently experienced by the local community and can be alleviated by consuming medicines or concoctions containing the mentioned species of plants.

Use Value (UV) and Fidelity Level (FL)

Based on the calculation of Use Value (UV), the highest values were obtained for tamarind (Tamarindus indica), guava (Psidium guajava), and betel leaf (Piper betle) with a UV value of 0.2. Meanwhile, for the highest Fidelity Level (FL), was turmeric (Curcuma domestica) with an FL value of 100% (Table 2). Ayyanar and Ignacimuthu (2011) stated that a higher UV value indicates the abundance of a plant species and its acceptance by the community as a medicinal ingredient.

The extract of tamarind plants shows the presence of tannins, flavonoids, and saponins, making tamarind effective as a medicine to enhance metabolism, reduce high blood pressure, and alleviate shortness of breath (Mun'im et al., 2009). Guava leaves contain various components, including carotenoids that function as antibacterial agents capable of killing or preventing the growth of bacteria causing diarrhea. Additionally, it contains other compounds that are highly beneficial for health (Rukmana and Yudirachman, 2016). The community believes that betel leaves are very good for health and can save on medical treatment costs. Betel leaves contain flavonoids, tannins, and essential oils that act as antibacterial and antioxidant agents, accelerating the body's response to wound healing (Hulu et al., 2022).

According to Khan et al. (2014), plants with the highest Fidelity Level (FL) are generally well-known within the community for treating specific diseases. This means that these plants have a high ability to treat certain diseases. Turmeric is known to have a chemical composition, including essential oil at 4.2-14%, fat oil at 4.4-12.7%, and curcuminoid compounds at 60-70%, which are beneficial as anti-inflammatory, antibacterial, antiviral, antioxidant, and more (Simanjuntak, 2012). The community in Bangbayang Village extensively utilizes the rhizomes of turmeric plants to treat various diseases, ranging from stomach ailments, itching, and appetite enhancement, to boosting immunity.

Table 2. Diversity of medicinal plants in Bangbayang Village, Sumedang, West Java

No.	Family	Scientific Name	Local Name	Habitus	Utilization	Part used	Processing Method	Usage	Technique Single	Technique Mixed	UV	FL (%)
1	Acanthaceae	*Graptophyllum pictum*	Handeuleum	Shrubs	Asthma	Leaves	Mashed	Applied to the chest	v		0,06	14%
					Hemorrhoids		Boiled and then added turmeric and brown sugar	Drink		v		
2	Alliaceae	*Allium sativum*	Bawang putih	Herbs	Boost immunity; Cough; Cold; Shortness of breath	Tuber	Crushed	Eaten	v		0,11	11%
3	Amaranthaceae	*Achyranthes aspera*	Jarong	Bush	Ringworm	Leaves	Boiled	Dabbed	v		0,06	3%
		Amaranthus cruentus	Bayam merah	Herbs	Low blood pressure	Leaves	Mashed, then brewed	Drank		v	0,03	3%
4	Amaryllidaceae	*Allium cepa*	Bawang merah	Herbs	Catching a cold	Tuber	Cut	Scraped onto the body	v		0,03	11%
5	Apiaceae	*Daucus carota*	Wortel	Herbs	Clear the eyes	Fruit	Boiled	Dripped with water	v		0,03	6%
6	Araceae	*Epipremnum aureum*	Sirih putih	Shrubs	Recovering postpartum; Cleansing female organs	Leaves	Boiled	Drinking; Dabbing	v		0,06	6%

No	Family	Species	Local name	Habit	Disease	Part used	Preparation	Application			Value	%
		Syngonium sp	Ki Balerang		External wounds	Leaves	Soaked	Smeared	v		0,03	3%
7	Arecaceae	*Cocos nucifera L*	Kelapa ijo	Trees	Stone urination	Fruit	Sliced	Drink the water	v		0,03	3%
8	Asparagaceae	*Cordyline fruticosa*	Hanjuang		Asthma	Leaves	Roasted until soft	Eaten	v		0,03	6%
		Ageratum conyzoides	Jukut bau/ Babandotan	Shrubs	Closing wounds; Nosebleed	Leaves	Mashed; Rolled	Smeared; stuffed into the nose	v		0,06	14%
9	Asteraceae	*Eupatorium odoratum*	Kirinyu/ Rumput minjangan	Bush	External wound	Fruit	Scraped and the insides taken out	Smeared	v		0,03	3%
		Ngai camphor	Sembung	Shrubs	Postpartum recovery; Ulcer; Rheumatism	Leaves	Boiled	Drink the boiled water	v		0,09	51%
		Taraxacum officinale	Jombang	Bush	Sciatica	Leaves	Boiled	Drink the boiled water	v		0,03	3%
10	Basellaceae	*Anredera cordifolia*	Binahong	Herbs	Joint pain	Leaves	Boiled	Drink the boiled water	v		0,03	3%
11	Campanulaceae	*Hippobroma longiflora*	Ki tolod/ Ki korejat	Herbs	Clear the eyes	Flower	Soaked	Dripped into the eye	v		0,03	26%
12	Caricaceae	*Carica papaya*	Gedang/ Pepaya	Trees	Low back pain; Hemorrhoids; High blood pressure	Roots; Fruit	Added with antanan leaves and boiled; boiled	Drinking cooking water; eating	v		0,09	9%
13	Chloranthaceae	*Chlorantus elatior*	Heuras tulang	Bush	Diabetes	Roots, Stem	Mixed with cecendet then Boiled	Drink the boiled water		v	0,09	9%
					Rheumatism; Sciatica	Leaves	Boiled	Drink the boiled water	v			

No	Family	Species	Local name	Habitus	Use	Part	Processing	Application		Value	%
14	Crassulaceae	*Kalanchoe pinnata*	Buntiris/ Cocor Bebek	Succulents	Fever, cold heat	Leaves	Mashed, and added onion	Compressed	v	0,06	6%
15	Cucurbitaceae	*Cucumis sativus*	Timun	Vines	Lowers high blood pressure	Fruit	Without processing	Eaten	v	0,03	14%
		Sechium edule	Labu siam	Vines	Lowers high blood pressure	Fruit	Without processing	Eaten	v	0,03	14%
16	Euphorbiaceae	*Jatropha curcas*	Jarak Pagar	Bush	Shortness of breath; Toothache	Leaves; Sap	Mashed; Cut the stem	Applied; smeared	v	0,06	3%
		Jatropha multifida L	Pinisilin/ Jarak cina	Bush	External wounds	Sap	Cut	Dripped	v	0,03	14%
		Manihot esculenta	Sampeu dodi/ Singkong	Shrubs	Fever; Internal heat	Leaves	Pickled; Boiled	Compressed; Drank	v	0,06	29%
		Leucena leucocephala	Petai cina	Bush	Itching; Fever; Diarrhea	Leaves	Chewed; Pounded; Hot water soaked	Smeared; drank	v	0,09	17%
17	Fabaceae	*Tamarindus indica*	Asam	Trees	Invigorates the body; Boosts metabolism; High blood pressure; Shortness of breath	Fruit	Boiled	Drink the boiled water	v	0,20	9%
					Fever; Substitute for massage oil; Abdominal pain during menstruation		Mixed with shallots; Mixed with turmeric and galangal and Boiled	Rubbed on; Drank	v		

18	Graminae	*Bamboosa vulgaris*	Haur koneng/ Bamboo kuning	Bamboo	Cough; Hepatitis	Stem	Cut until water comes out	Drink the water	v		0,06	6%
19	Lamiaceae	*Coleus scutellarioides*	Jawer kotok/Miana	Bush	Clears the eyes	Leaves	Roasted	Dripped	v		0,03	3%
20	Laminaceae	*Orthosiphon aristatus*	Kumis kucing	Herbs	Kidney stone; Urinary stone; Low back pain	Leaves	Boiled	Drink the boiled water	v		0,11	11%
					Kidney stones		Dicampur daun pecah beling, lalu Boiled	Drink the boiled water		v		
21	Lauraceae	*Persea americana*	Alpukat	Trees	Stomach pain; Constipation; High blood pressure	Leaves	Boiled	Drink the boiled water	v		0,09	9%
					High blood pressure		Mixed with cracked leaves, then Boiled	Drank		v		
22	Loranthaceae	*Loranthus europaeus*	Mangandeuh	Epiphytes	Diabetes; High blood pressure	Leaves	Boiled	Drink the boiled water	v		0,06	6%
23	Mackinlayaceae	*Centella Asiatica*	Antanan/ Pegagan	Herbs	Closing wounds	Leaves	Mashed	Applied	v		0,03	3%
24	Menispermaceae	*Tinospora tuberculate*	Brotowali	Vines	Kidney failure; Increased appetite	Leaves; Stem	Boiled	Drink the boiled water	v		0,06	6%

No	Family	Species	Local name	Habit	Use	Part	Preparation	Application			
25	Moraceae	*Artocarpus heterophyllus*	Nangka	Trees	Sore throat	Leaves	Blended with soursop leaves, then boiled and mixed with eucalyptus oil	Inhaled	v	0,03	3%
26	Musaceae	*Musa textilia*	Pisang raja	Trees	External wounds	Sap	Stem cut	Applied	v	0,03	3%
		Musa sp	Pisang	Trees	Closes wounds/stops bleeding; High blood pressure	Sap; Bud	Cut; Roasted, squeezed, the water is taken and then allowed to stand outside	Dripped; Drank	v	0,06	29%
27	Myrtaceae	*Melaleuca leucadendra*	Kayu putih	Trees	Shortness of breath	Leaves	Boiled until it releases steam	Inhaled	v	0,03	9%
		Syzigium aqueum	Jambu air	Trees	Diarrhea	Leaves	Boiled	Drink the boiled water	v	0,03	6%
		Syzygium polyanthum	Salam	Trees	High blood pressure	Leaves	Boiled	Drank	v	0,06	9%
					Knee pain		Mixed with lemongrass, turmeric, and ginger then boiled	Drank			
		Psidium guajava	Jambu biji/ Jambu klutuk/ Jambu batu	Trees	Diarrhea; Hemorrhoids; Diabetes; External wounds	Leaves	Boiled; The leaves are washed thoroughly; Pounded	Drink the boiled water; eat; Smeared	v	0,20	23%

					Sciatica; Sprain; Cough	Leaves	Leaves mixed with garlic then pounded: Mixed with rambutan leaves	Smeared; Drank	v	
					Body warming; Cough; Flu		Boiled	Drink the boiled water	v	
		Syzygium aromaticum	Cengkih	Trees		Flower	Mixed with lime leaves and eucalyptus leaves and Boiled until steam forms			0,09	3%
					Cold			Inhaled	v	
28	Phyllanthaceae	*Sauropus androgynus*	Katuk	Bush	Releases breast milk	Leaves	Boiled	Dimakan	v	0,03	3%
29	Piperaceae	*Piper betle*	Sirih hijau	Vines	Sciatica; Nosebleed; Cavities; High blood pressure; Vaginal discharge; Cough; Clear eyes	Leaves	Boiled	Drink the boiled water; eat immediately	v	0,20	57%
		Piper aduncum	Kicabe/ Seuseurehan/ Sirih Hutan	Bush	Vaginal discharge; Clear eyes	Leaves; Stem	Mixed by cat's whisker leaves, constipated leaves, then	Drank; dripping water	v	0,06	3%

No	Family	Species	Local name	Habit	Disease	Part	Preparation	Administration		Value	%
							Boiled; Cleaved				
		Gigantochloa atter	Bamboo buluh	Bamboo	Cough	Stem	Split	Drink the water	v	0,03	3%
30	Poaceae	*Cymbopogon citratus*	Sereh	Herbs	Improves immunity; Aching pain; Sore throat	Leaves	Mixed with bay leaves and lime juice then boiled; mixed with ginger then boiled	Drink the boiled water	v	0,09	17%
		Imperata cylindrica	Eurih/Alang-alang	Herbs	Low back pain; Sciatica; Diabetes	Roots	Added with antanan leaves then Boiled; Mixed with elephant papaya root, palm root, areca root, lempuyang rhizome, then Boiled; Boiled until the water is red	Drink the boiled water	v	0,06	6%
		Dinochloa scandens	Cangkoreh	Bamboo	Clear eyes	Stem	Split	Dripped the water	v	0,03	34%
31	Rubiaceae	*Coffea canepora*	Kopi	Bush	External wounds	Biji	Mashed	Sprinkled	v	0,03	3%
		Gardenia jasminoides	Kaca piring/ Pecah beling	Bush	Internal heat	Leaves	Ground and brewed	Drank	v	0,03	17%

No	Family	Scientific name	Local name	Habit	Disease	Part	Preparation	Application		Value	%
		Morinda citrifolia	Mengkudu	Trees	High blood pressure	Fruit	Boiled	Drank	v	0,03	6%
		Citrus maxima	Jeruk bali	Trees	Itching	Leaves	Mixed with guava leaves, then boiled	Dabbed	v	0,03	6%
					Itching		Boiled	Dabbed	v		
32	Rutaceae	*Citrus sp*	Jeruk	Trees	Boost immunity	Leaves	Mixed with eucalyptus and hot water, then soaked	Inhaled	v	0,06	6%
		Citrus aurantifolia	Jeruk nipis	Bush	Flu and cough; body aches	Fruit; Kulit	Squeezed and added with soy sauce; skin grated and lemongrass added, then boiled	Drank	v	0,09	11%
33	Sapindaceae	*Nephelium lappaceum*	Rambutan	Trees	Cough	Leaves	Boiled	Drink the boiled water	v	0,03	3%
34	Solanaceae	*Physalis angulata*	Cecendet/ Ciplukan	Herbs	Aches and pains; Rheumatism	Leaves; Roots; Fruit	Dried and mixed with eurih root, areca root, palm root, and boiled	Drink the boiled water	v	0,09	9%
					Uric acid		Boiled	Drink the boiled water	v		
35	Theaceae	*Camellia sinensis*	Teh hijau	Bush	Improves digestion	Leaves	Roasted and pounded then boiled	Drank	v	0,03	3%
36	Thymelaeaceae	*Phaleria macrocarpa*	Mahkota dewa	Trees	Paralyzed	Fruit	Sliced and dried in the	Drank	v	0,03	9%

No	Family	Species	Local name	Habit	Uses	Part used	Preparation	Application			value	%
							sun then boiled					
37	Xanthorrhoeaceae	*Aloe vera*	Lidah buaya	Succulents	Skin moisturizing; Hair nourishing; Heatiness	Fruit	Cut and blended	Drank; Smeared	v		0,09	11%
38	Zingiberaceae	*Currcuma caesia*	Kunyit hitam	Herbs	Stomach pain	Rhizome	Grated and pressed	Drank	v		0,03	3%
		Curcuma domestica Val.	Kunyit	Herbs	Ulcer; Increase appetite; Fade scars; Itching	Rhizome	Grated and brewed; charred; grated	Drank; aten directly; applied topically	v		0,14	100%
					Ulcer; Boost immunity		Grated and Boiled, then mixed with honey or brown sugar	Drank		v		
					Cough; Sciatica		Cut	Applied	v			
		Zingiber officinale	Jahe	Herbs	Boost immunity; Sore throat; Joint pain	Rhizome	Blended with lemongrass, turmeric, bay leaves, and brown sugar then boiled; Pounded then mixed with green coconut water	Drink the boiled water		v	0,14	66%
		Alpinia galanga	Lengkuas	Herbs	Healing wounds	Rhizome	Grated	Applied	v		0,03	3%

Zingiber montanum	Panglai/ Bangle	Herbs	Itching	Rhizome	Grated	Applied	v		0,03	3%
			Cough; Ulcer		Shredded and given water	Drank	v			
Kaempferia galanga	Kencur	Herbs	Sprained leg; Sprains; Fractures; Promotes breastfeeding	Rhizome	Mashed with black glutinous rice; squeezed to extract the water	Applied; Drank		v	0,17	37%

CONCLUSION

Based on the research results in Bangbayang Village, Sumedang, West Java, it can be concluded that there are 65 species of plants belonging to 38 families used by the community in Bangbayang Village to treat 52 types of diseases; The plant part most commonly used by the people of Bangbayang Village is the leaves and the most widely used method of processing medicinal plants by the residents of Bangbayang Village is boiling. Tamarind (*Tamarindus indicus*), guava (*Psidium guajava*), and betel leaf (*Piper betle*) obtained the highest values in the Use Value (UV) calculation, which is 0.20, and turmeric (*Curcuma domestica* Val.) obtained the highest value in the Fidelity Level (FL) calculation, which is 100%, for treating stomach ulcers, increasing appetite, fading scars, relieving itching, and boosting immunity.

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