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STUDY OF MEDICINE PLANTS ETHNOBOTANY IN BANCEUY INDIGENOUS PEOPLE SUBANG REGENCY, WEST JAVA

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ABSTRACT

The Kampung adat Banceuy society is one of the indigenous communities of the archipelago that still practice local wisdom insight, such as plants, for medicinal purposes. This study aims to inventory the diversity of medicinal plants used by the people of Kampung adat Banceuy. The research method was done by direct observation and depth interviews with key informants and respondents. The results show that society has used 48 species (28 families) of medicinal plants for generations. The sources of plants are obtained from around settlements that grow wildly or from their garden. The leaf is the most used plant organ. Herbs are the most common plant habitus used. Medicinal plants were used directly or by processing traditionally first. Medicinal plants are planted independently to maintain availability and indirectly for conservation. This society's inventory of medicinal plants expects to be beneficial information for further conservation and development efforts. This study also presented data on plants used by the indigenous people of Banceuy for various needs.

Key words: *biodiversity, ethnobotany, indigenous peoples*

INTRODUCTION

The plurality of Indonesian society can be seen in many ethnic groups widespread in the archipelago. Statistics data states that 1,331 ethnic groups in The plurality of Indonesian society can be seen in many ethnic groups widespread in the archipelago. Statistics data states that 1,331 ethnic groups in Indonesia are grouped into 633 major ethnic groups (BPS 2015).

The Sundanese are one of the second largest ethnic groups, with a proportion of 15.5% of the total population of Indonesia (BPS 2015). One of the Sundanese tribes whose people still adhere to customs and have local wisdom is the indigenous people of Banceuy. This community is located on the eastern slope of Mount Tangkubanparahu, with an area of 154 hectares dominated by forest areas (Supriatna 2011).

The life of the Banceuy indigenous people still depends a lot on nature. They even see themselves as part of nature (Afifah and Moeis 2017). All forms of action in their lives are often accompanied by various rituals or traditional ceremonies (Afif 2020). In carrying out their traditional ceremonial rituals, indigenous peoples often use a variety of crops, including plants (PKPU 2014).

In general, the use of plants in indigenous peoples is not only limited to ritual activities of traditional ceremonies but also for food and medicine (Setiawan and Qiptiyah 2014). Most Indonesian population (40-59%) use plants for treatment (WHO 2019). Ethnobotany can be a tool to assess indigenous people's knowledge of the benefits of plants in meeting their daily needs, including medicinal plants (Suryadharma 2008).

The inventory of medicinal plants in Banceuy indigenous people is still unknown. The absence of conservation efforts and the swift currents of modernization can diminish and threaten local knowledge of medicinal plants (Bodeker 2000). Thus, information on the diversity of medicinal plants of Banceuy indigenous people is critical to know so that it can be the basis for further development and conservation efforts. This study aims to inventory the diversity of medicinal plants used by the people of Kampung adat Banceuy.

RESEARCH METHOD

The research was carried out in Banceuy indigenous people village, Sanca village, Ciater District, Subang Regency, West Java (6°42'16" E - 107°42'2"LS). Data were collected using direct observation, documentation, literature review, and depth interviews in the form of semi-structured interviews with indigenous peoples. Interviews were conducted with key informants from the Banceuy community who were considered competent to know medicinal plants, including village elders, traditional healers (paraji), and ten indigenous villagers. The snowball sampling technique was used to determine respondents (Nurdiani 2014; As'ari and Hendriawan 2016; Maria *et al*. 2020).

RESULT AND DISCUSSION

1. Utilization of plants by the Banceuy indigenous people

Humans use plants since humans interact with forests (Colfer *et al*. 2006). The indigenous people of Banceuy often interact with the forest and are very

attached to various plants. Not only for ritual ceremonies, but they also use various plants for food, building material, art tools, and medicine (Figure 1, Table 1).

2. **Medicinal plants in Banceuy Indigenous People**

The use of medicinal plants is relatively high. It can be seen from the diversity of medicinal plant species and the variety of food plants they use daily (Figure 1). The most common reasons people use medicinal plants are that they are more affordable, more in line with the patient's ideology, and are not worried about side effects (Wachtel-Galor and Benzie 2011). This is in line with the respondents' answers, who stated that the medicinal plants they used were easier to obtain, cheaper, more efficacious, and without side effects.

The study results show that 48 plants have been used by indigenous peoples for traditional medicine for generations (Table 2). All of them are divided into 28 families. Zingiberaceae is the most widely used plant family by the indigenous people of Banceuy (Table 2). This rhizome medicinal plant has been widely used by other indigenous communities, such as the indigenous people of Dukuh, Dayak Iban, Anak Rawa Kampung, and Cintaratu villages (Hidayat et al. 2010; Meliki et al. 2013; Utami et al. 2019; Fitrianti and Partasasmita 2020).

Plants in the Zingiberaceae family have been widely used as a source of food and medicine (Pitopang et al. 2018). The bioactive content in this family has been confirmed to be able to treat various diseases (Lakhan et al. 2015; Zahara et al. 2018; Saefudin et al. 2021).

Herb is the most widely used for treatment by indigenous peoples (Zikri et al. 2018; Pelokang et al. 2019). Likewise with Banceuy indigenous people. Half of the medicinal plant population (24 species) in this community belongs to the herbs (Figure 2). The many types of rhizomes from the Zingiberaceae family contribute to increasing the amount of herb dominance in medicinal plants based on their life form.

Different plant organs may contain different bioactive compounds (USDA 2021). The leaf organ is the part of the plant organ most often used by Banceuy indigenous people. More than half of the types of medicinal plants use part of the leaf organ for treatment (Figure 3). Apart from being suspected of having a lot of bioactive substances, the use of this part of the leaf is also considered easy to obtain and process (direct interview with Odang, 48-year-old male, 7th April 2021).

Table 1 Various plants used for food, building material, art tools, and ceremonies by Banceuy indigenous people.

No	Utilization	Local Name	Species
1	Food	Pisang	*Musa paradisiaca*
2		Buah	*Mangifera indica*
3		Rambutan	*Nephelium lappaceum*
4		Manggis	*Garcinia mangostana*
5		Durian	*Durio zibethinus*
6		Kalapa	*Cocos nucifera*
7		Taleus	*Colocasia esculenta*
8		Sampeu	*Manihot esculenta*
9		Ganas	*Ananas comosus*
10		Beas	*Oryza sativa*
11		Kopi	*Coffea canephora*
12		Tomat	*Solanum lycopersicum*
13		Buncis	*Phaseolus vulgaris*
14		Kacang panjang	*Vigna unguiculata*
15		Bayem	*Amaranthus sp*
16		Kangkung	*Ipomoea aquatica*
17		Jagong	*Zea mays*
18		Waluh	*Sechium edule*
19		Sawi	*Brassica chinensis*
20		Cengek	*Capsicum frutescens*
21		Cabe	*Capsicum annuum*

No	Utilization	Local Name	Species
22		Daun sampeu	*Manihot esculenta*
23		Daun gedang	*Carica papaya*
24		Jengkol	*Archidendron pauciflorum*
25		Peuteuy	*Parkia speciosa*
26		Kentang	*Solanum tuberosum*
27		Bawang beureum	*Allium cepa*
28		Bawang bodas	*Allium sativum*
29		Bawang daun	*Allium fistulosum*
30		Saledri	*Apium graveolens*
31		Cikur	*Kaempferia galanga*
32		Jahe	*Zingiber officinale*
33		Koneng	*Curcuma longa*
34		Laja	*Alpinia galanga*
35		Salam	*Syzygium polyanthum*
36		Sereh	*Cymbopogon citratus*
37		Terong	*Solanum melongena*
38		Bonteng	*Cucumis sativus*
39		Kacang beureum	*Phaseolus vulgaris*
40		Kacang hejo	*Vigna radiata*
41		Sirsak	*Annona muricata*
42		Daun kelor	*Moringa oleifera*
43		Jeruk nipis	*Citrus aurantifolia*
44		Jeruk lemon	*Citrus limon*
45		Jeruk purut	*Citrus hystrix*
46		Jeruk	*Citrus sinensis*
47		Nangka	*Artocarpus heterophyllus*
48		Salak	*Salacca zalacca*
49	Traditional ceremonies	Hanjuang	*Cordyline fruticosa*
50		Jawer kotok	*Coleus scutellarioides*
51		Hanarusa	*Justicia gendarussa*
52		Pisang kulutuk	*Musa balbisiana Colla*
53		Tebu	*Saccharum officinarum*
54		Taleus hideung	*Alocasia plumbea nigra*
55		Bambu aur koneng	*Bambusa Vulgaris*
56	Art tools	Bambu gombong	*Gigantochloa pseudoarundinacea*
57		Bambu awi tali	*Gigantochloa apus*
58		Bambu tamiang	*Schizotachyum blunei*
59		Pohon berenuk	*Crescentia cujete*
60		Kayu nangka	*Artocarpus heterophyllus*
61		Tangkal kawung	*Arenga pinnata*

No	Utilization	Local Name	Species
62		Bambu buluh	*Schizostachyum brachycladum*
63	Building material	Albasiah	*Albizia chinensis*
64		Suren	*Toona Sureni*
65		Minri	*Melia azedarach*
66		Sobsi	*Maesopsis eminii*
67		Jeungjing	*Paraserianthes falcataria*

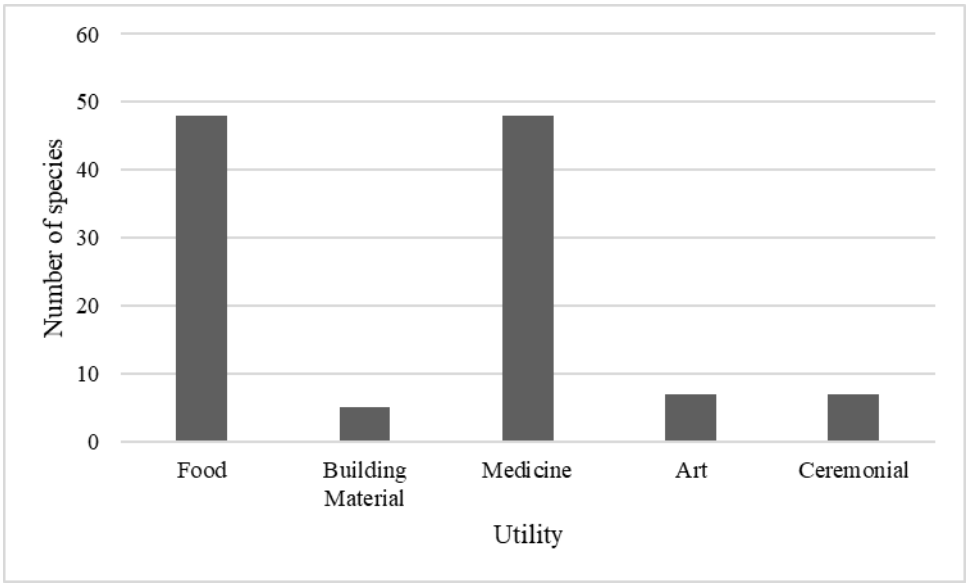

Figure 1 Various uses of plants by Banceuy indigenous people.

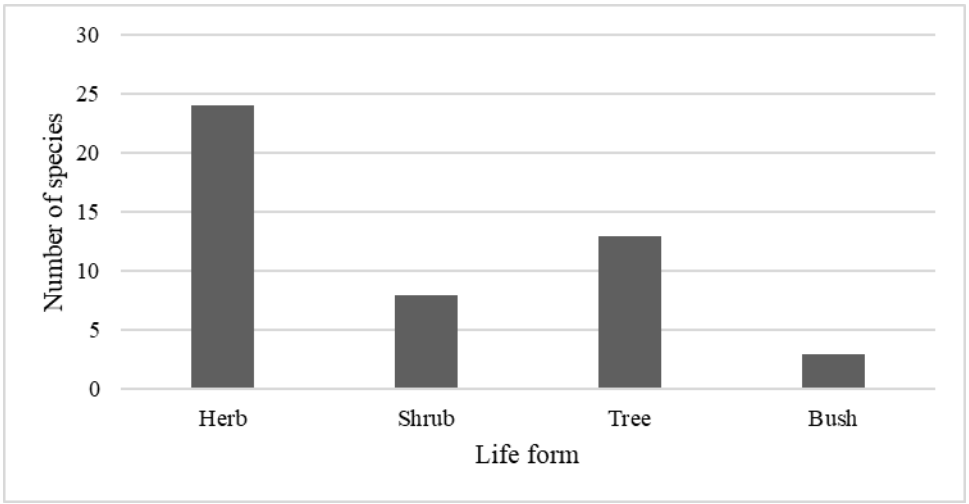

Figure 2 Grouping of medicinal plants of Banceuy indigenous people based on the life form

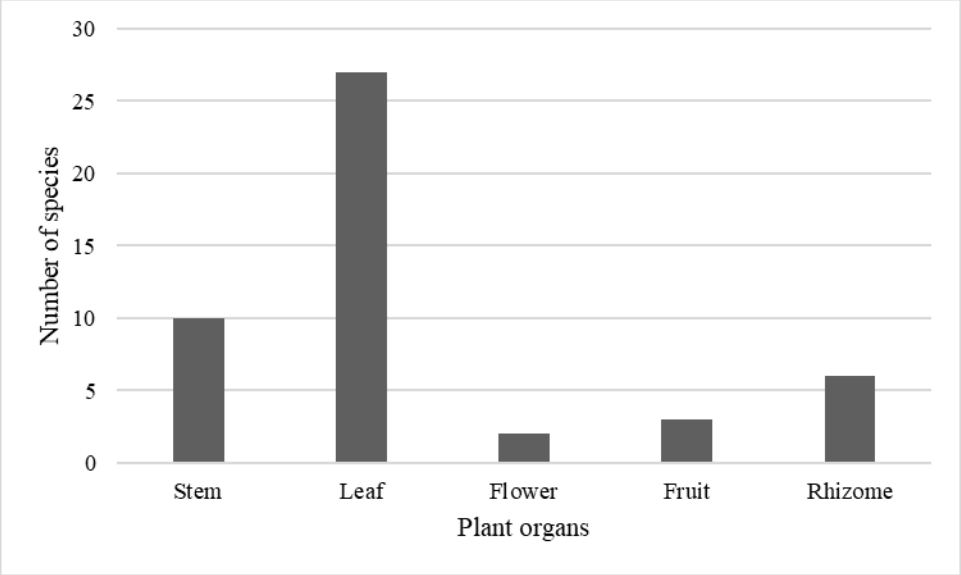

Figure 3 Grouping of medicinal plants of Banceuy indigenous people based on plant organs.

Table 2 Diversity of species and efficacy of medicinal plants of Banceuy indigenous people.

No	Family	Species	Local Name	Efficacy
1	*Acanthaceae*	*Graptophyllum pictum*	*Haneuleum*	Treat gastric pain
2		*Strobilanthes crispus*	*Pecah beling*	Treating constipation
3	*Annonaceae*	*Annona muricata*	*Sirsak*	Treat fever and chills
4	*Apocynaceae*	*Alstonia scholaris*	*Lame*	Treating toothache
5	*Araceae*	*Areca catechu*	*Jambe ngora*	Treat gastric pain and colds
6		*Xanthosoma sagittifolium*	*Taleus*	Treat itching irritation due to caterpillars
7	*Asteraceae*	*Ageratum conyzoides*	*Babadotan*	Treating external wounds
8		*Blumea balsamifera*	*Sembung*	Treat gastric pain
9		*Crassocephalum crepidioides*	*Sintrong*	Treating hipertension
10	*Basellaceae*	*Anredera cordifolia*	*Binahong*	Treat sore troat
11	*Campanulaceae*	*Hippobroma longiflora*	*Korejat*	Treat sore eyes
12	*Caricaceae*	*Carica papaya*	*Gedang*	Treating cutting wounds
13	*Clusiaceae*	*Garcinia mangostana*	*Manggis*	Smooth urination
14	*Crassulaceae*	*Kalanchoe pinnata*	*Buntiris*	Treating fever
15	*Euphorbiaceae*	*Jatropha multifida*	*Betadine tangkal*	Treating cutting wounds
16		*Ricinus communis*	*Jarak*	Treat sprains and nail infections
17		*Euphorbia hirta*	*Nanangkaan*	Treating pain after circumcision
18	*Fabaceae*	*Archidendron pauciflorum*	*Jengkol*	Treating toothache
19	*Lamiaceae*	*Coleus scutellarioides*	*Jawer kotok*	Treat vaginal discharge and bleeding
20		*Orthosiphon aristatus*	*Kumis ucing*	Treating painful urination
21	*Lauraceace*	*Cinnamomum burmannii*	*Ki amis*	Treat sprains and aches

No	Family	Species	Local Name	Efficacy
22	*Malvaceae*	*Abelmoschus manihot*	*Mustajab*	Treat sore throat
23	*Menispermaceae*	*Tinospora cordifolia*	*Bratawali*	Treating body aches (pain)
24		*Cyclea barbata*	*Camcau*	Treat sore throat
25		*Arcangelisia flava*	*Ki koneng*	Treat gastric pain
26	*Moraceae*	*Ficus benjamina*	*Caringin*	Treating toothache
27	*Moringaceae*	*Moringa oleifera*	*Kelor*	Treating diabetes
28	*Musaceae*	*Musa acuminata*	*Cau*	Treat wounds
29	*Myrtaceae*	*Psidium guajava*	*Jambu biji*	Treat diarrhea
30	*Phyllanthaceae*	*Sauropus androgynus*	*Katuk*	Increase breast milk production
31	*Piperaceae*	*Piper sarmentosum*	*Karuk*	Treat shortness of breath
32		*Piper betle*	*Seureuh*	Treats itching and wounds, as an antiseptic and strengthens the uterus
33		*Piper crocatum*	*Seureuh beureum*	Treat body pain
34	*Plantaginaceae*	*Plantago major*	*Ki urat*	Treating sprains and internal injuries
35	*Poaceae*	*Oryza sativa var. glutinosa*	*Beras ketan hideung*	Treating sprains
36		*Bambusa vulgaris*	*Hawur koneng*	Treat cough
37		*Cymbopogon nardus*	*Sereh wangi*	Treat fever and chills
38	*Rutaceae*	*Citrus sinensis*	*Jeruk*	Treat fever and chills
39	*Solanaceae*	*Capsicum frutescens*	*Cengek*	Treat fever
40	*Xanthorrhoeaceae*	*Aloe vera*	*Lidah buaya*	Treat burns
41	*Zingiberaceae*	*Etlingera elatior*	*Honje*	Treat headaches
42		*Zingiber officinale var.rubrum*	*Jahe beureum*	Treat cough
43		*Curcuma longa*	*Koneng*	Treat gastric pain and as an antiseptic
44		*Curcuma zedoaria*	*Koneng Bodas*	Treat gastric pain
45		*Alpinia galanga*	*Laja*	Treat cough
46		*Amomum aculeatum*	*Parahulu*	Treat headaches
47		*Kaempferia galanga*	*Cikur*	Treating sprains
48		*Zingiber officinale*	*Jahe*	Treat dismenore

3. Processing and application of medicinal plants by Banceuy indigenous people

The processing of medicinal plants is done traditionally in several ways. The most common processing methods are boiling, brewing, and pounding, but most medicinal plants are usually applied directly without being processed first (Figure 4). The procedures for using medicinal plants vary, such as drunk, smear, drip, compress, steam, and bath (Figure 5). Examples of processing and use of medicinal plants based on plant organs can be seen in Table 3.

The Banceuy indigenous people depend on nature (Afifah and Moeis 2017). The results of the interviews confirmed this. Their medicinal plants were obtained from self-cultivation and taken from the surrounding nature, including forests. Babadotan, Ki koneng, Ki urat, Sintrong, and Korejat are wild plants that get around the forest and settlements.

Indigenous peoples use a variety of plants to maintain their health. Many medicinal plants are selected empirically from generation to generation and result from long experiments that continue to this day (Lewis 1992). Based on the results of interviews, the knowledge of the Banceuy indigenous people about medicinal plants has been obtained from generation to generation. This insight is a legacy of knowledge from the previous elders. All respondents answered that they knew and used this traditional medicinal plant from childhood until now. The consistent use of medicinal plants in daily life is an indirect effort to preserve the insight of local wisdom from generation to generation.

To ensure the availability of medicinal plants people are accustomed to self-cultivation by planting them in their respective yards. In addition, some communities also plant medicinal plants in the forest closest to their settlements, namely in the forest of Raden Suwanda (direct interview with Odang, 48-year-old male, 23rd May 2021). This cultivation effort is considered positive in protecting and strengthening biodiversity's cultural values. It can create a positive attitude towards biodiversity conservation efforts (Wiersum et al. 2006).

a b c d

Figure 4 Variations in the processing of medicinal plants by Banceuy indigenous people: a. boiled b. brewed c. ground d. without processing (direct use).

a b c d e

Figure 5 Variations in the application of medicinal plants by Banceuy indigenous people: a. rubbed b. compressed c. steamed d. dripped and d. drunk or eaten .

Table 3 The several samples of medicinal plant processing methods by Banceuy indigenous people based on plant organs.

No	Plant organ	Plant species and local name	Efficacy	Processing Method and Use
1	Stem	*Amomum aculeatum* (Parahulu)	Treat fever	Parahulu stems are washed and then cut into several parts. The stems are then ground and brewed with hot water. Before brewing, add lime leaves, soursop leaves, and fragrant lemongrass to increase its properties. This brew can be used by compressing or vaporizing.
		Cinnamomum burmannii (Ki amis)	Treat sprains or aches	The inner bark of the Ki amis is scraped and then applied or massaged on the sprained or sore part.
2	Leaf	*Ageratum conyzoides* (Babadotan)	Treating external wounds	Some Babadotan leaves are chewed and then applied to the bleeding wound surface.

No	Plant organ	Plant species and local name	Efficacy	Processing Method and Use
		Moringa oleifera (Kelor)	Treating diabetes	Moringa leaves are washed and made into light soup with chayote, corn, onion, and garlic.
3	Flower	*Hippobroma longiflora* (Korejat)	Treat sore eyes	Korejat flowers are picked along with their stalk. The end of the flower stalk is held and directed to the eye. Position it so that the sap from the flower stalk drips into the eye.
4	Fruit	*Garcinia mangostana* (Manggis)	Smooth urination	Mangosteen rind is chopped into small pieces, then boiled with three cups of water ± 600 ml. Boil over low heat until reduced to one glass (± 200 ml).
		Areca catechu (Jambe ngora)	Treat stomachache	The young Jambe fruit is peeled, and the seeds are taken. Seeds can be directly chewed and eaten.
5	Rhizome	*Zingiber officinale var.rubrum* (Jahe beureum)	Treat cough	Red ginger rhizome grated or thinly sliced. The slices of ginger are then brewed with ± 200 ml of hot water. Before drinking, steeping water is filtered first.

CONCLUSION

The Banceuy indigenous people have used 48 species of plants (from 28 families) as medicinal ingredients. The rhizome group (Zingiberaceae) is the most widely used medicinal plant group. Based on habitus, medicinal plants are dominated by herbal forms. Leaf organs are the most widely used compared to other organs. There are many variations in the processing and application of medicinal plants by Banceuy indigenous people. Planting in the yard and forest, as well as using these medicinal plants in their daily lives, are the efforts of Banceuy indigenous people in preserving medicinal plants and their insight into local wisdom.

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