Reading the Ethnobotanical Value of Plant Diversity in South Kalimantan

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ABSTRACT
This research aims to conduct a comprehensive inventory of plants in South Kalimantan while delineating their significance from the ethnobotanical perspective of the Banjar people. Employing descriptive and qualitative research methodologies, data collection involved a triad of methods: observational studies, interviews, and extensive library research. The study followed a structured sequence encompassing observation, data collection, presentation, analysis, and conclusive inferences. Rooted in ethnobotany theory with an ethnographic approach, this investigation aimed to unearth the intrinsic relationships between the Banjar community and their local flora. The findings unveiled a rich lexicon of plant names in South Kalimantan, particularly spotlighting categories such as swamp plants (Nypa), wood-producing species (Eusideroxylon zwageri), fruit-bearing flora (layung), lemongrass (Cymbopogon citratus), ornamental plants (e.g., bird nest fern or Asplenium nidus), and yam plants (Manihot esculenta). Additionally, the indirect consumption of fruits, such as sugar palm (Arenga pinnata), and vegetables like yellow velvet leaf (Limnocharis flava), were documented. This research sheds light on the multifaceted roles that South Kalimantan's plants play within the socio-cultural and utilitarian framework of the Banjar people. Understanding the intricate connections between the local flora and the Banjar community not only enriches ethnobotanical knowledge but also underscores the significance of indigenous plant life in sustaining traditional practices and livelihoods.

Keywords: *Diversity, ethnobotanical value, reading, South Kalimantan.*

1. INTRODUCTION

Ethnobotany is a scientific discipline that explores the intricate relationship between humans and plants. As articulated by Salsabila (2021), it revolves around the interaction between humans, plant life, and their traditional applications. Morell-Hart et al. (2019) further elaborates on ethnobotany, emphasizing its study of human knowledge pertaining to natural landscapes, including the management, cultivation, and skilful utilization of diverse plant species. This field scrutinizes the deep-rooted connections between people and the botanical world, shedding light on the rich tapestry of human-plant interactions and the utilization of plant resources across various cultures and traditions.

The use of this plant for future life is significant as an alternative material for food, medicine, building materials, decorative plants, skills, and cultural support in formal and semi-formal events (Falah et al., 2013; Zhang et al., 2020; Cavalcanti et al., 2019; Anggraini et al., 2018). In this regard, the Banjar people reside in many districts, including Kotabaru, Tanah Bumbu, Tanah Laut, Banjarmasin, Banjarbaru, Barito Kuala, Tapin, Banjar District, Hulu Sungai Selatan, Hulu Sungai Tengah, Hulu Sungai Utara, Balangan, and Tabalong.

Generally, settlements and surrounding areas consist of various valuable plants for everyday life. However, due to the increase in residences, the shift of forests to plantations, climate conditions, natural disasters, and economic needs can cause land in these regencies to have a different diversity of plants, especially in the capital city of Banjarbaru, Banjarmasin City, and others. These plants spread from swampy areas, land, and mountainous regions. Various typical plants have begun to be rare, with all their forms and uses. This plant lives on swampy ground, in ordinary plains, and in mountainous regions. Examples of rare plants include tandui (*M. rufocostata*) (Fitriani et al., 2022), *birik* wood (*Albizia procera*) (Salsabila, 2021), and ironwood (*Eusideroxylon zwageri*) (Kusmana & Hikmat, 2015). These three studies confirm that South Kalimantan has significant plants for name and preservation, whether they are scarce or not.

N. Haristiani et al. (eds.), *Proceedings of the 7th International Conference on Language, Literature, Culture, and Education (ICOLLITE 2023)*, Advances in Social Science, Education and Humanities Research 832,
https://doi.org/10.2991/978-94-6463-376-4_52

This research is the first step for researchers to document the names of plants in South Kalimantan from the perspective of the Banjar people, either in terms of plant names or their utilization. Another reason for the significance of this research is that the extinction of plants may eliminate the vocabulary and cultural descriptions of society. Culture reflects the identity of the local community.

Previous ethnobotanical research has focused on ethnomedicine (Kinanti & Rachman 2019), socio-cultural aspects (Rukmana, Mukhtar, and Zulkarnain 2021), food and medicine (Susanti, 2015), as firewood and buildings (Salsabila 2021). These five studies have theoretical similarities with what researchers do, namely, ethnobotany. However, this study focuses on the description of the lexicon of plants that has ethnobotanical value in various aspects of the life of the Banjar people in South Kalimantan.

Based on this, the research results will benefit local knowledge for the present and future generations. Hopefully, this knowledge will also inspire related parties to develop the concern for plant management and its utilization in the cultural life of society in general.

2. LITERATURE REVIEW

Ethnobotany holds crucial significance in the preservation of community knowledge regarding environmental practices rooted in local cultural values (Alfayed & Riefani, 2022). It underscores the inextricable link between modern scientific understanding of the natural environment and the wealth of traditional knowledge (Hakim, 2014). This study aims to capture local insights into community life, emphasizing the intimate connection between daily activities and the natural surroundings. Recognizing plants as integral components of the natural world, the preservation of these organisms' hinges on human-driven policies and biological factors, such as precipitation, drought, indiscriminate logging, and other extreme conditions (Hendra & Oktaviani, 2020; Padilla et al. 2021; Purwanto, 2020). This research endeavors to illuminate the intricate interplay between cultural values, environmental practices, and the crucial role of human actions in the conservation of plant life within various ecosystems.

Suryadarma (2008) highlights the importance of safeguarding plants through extensive dissemination and research, emphasizing the crucial need for forest protection. Additionally, a collective perspective, represented by Aziz et al. (2018), Annisa (2019), and Longo Blasón et al. (2022), underscores the multifaceted roles of plants in diverse cultural practices. These encompass not only their role in providing sustenance but also their involvement in pivotal life events such as marriage ceremonies, funerals, proposals, births, clothing, tools, decorations, potions, crafts, cosmetics, dyes, preservatives, and materials for transportation. However, Sujarwo and Keim (2017) caution that local knowledge about ethnobotany faces the risk of transformation due to the rapid advancements in modern industries, which could potentially impact traditional practices and indigenous plant uses. This juxtaposition highlights the delicate balance between preserving traditional knowledge and adapting to the swiftly evolving modern landscape in the context of ethnobotanical practices.

3. METHOD

The research methodology adopted for this study is qualitative and descriptive in nature. It involves the collection of both written and oral data derived from meticulous observations (Muttaqin & Azizi 2022). The data collection spanned across several regencies including Hulu Sungai Selatan, Tabalong, Tanah Bumbu, Kotabaru, and Banjar. These regions were selected due to their representation of the diverse array of typical plants found in South Kalimantan. The observational period for data collection extended from January to June 2023. Notably, the researchers have resided in Hulu Sungai Selatan and Banjar Regency for several decades, with the current residence located in Banjar. This extensive period of residence in the region has facilitated direct observation and interaction with the local activities and various plant species, thereby substantiating the depth of insights for understanding the ethnobotanical practices of the Banjar people.

The research methods were observation, interviews, documentation, and library studies (Abubakar, 2021). The researcher conducted observations to determine the research area, interviews, documentation, and literature. These steps confirm knowledge about the names and benefits of these plants based on ethnobotanical theory, such as observation, data collection, selection of data, presentation, analysis, and conclusions. The data collection technique was direct observation, in which the researcher directly observed the research area. This research applies structured and uninvolved conversation observation interviews, while the documentation is to obtain various previous studies on ethnobotany in the lives of the Banjar people in South Kalimantan. The plant samples consisted of 60 species. These species were then sorted based on their type and life benefits. These benefits are related to ethnobotanical theories such as food, clothing, shelter, medicine, decoration, traditions, and economics. To help with memory, the researcher recorded and documented the data. These data were analyzed based on interpretation, which includes reduction, presentation, and verification.

Based on this fact, the theory is ethnobotany with an ethnographic approach. Aisyah (2020) states that ethnography studies the customs and culture of society. Data validation uses time and place triangulation.

4. RESULTS AND DISCUSSION

There are forty species of plants as the other representative, most of which were obtained from observations in the Hulu Sungai Selatan District, Tabalong, Banjar District, Kota Baru, and Tanah Bumbu. However, some of these were from the literature and previous studies. These sixties consist of various names and benefits that have ethnobotanical value for the lives of the Banjar people. Examples and explanations are provided from Table 1 to Table 8.

4.1. Lexicon of Plant Names in South Kalimantan

4.1.1. The Lexicon of Fruit-Producing Plant Names in South Kalimantan

Table 1. The lexicon of fruit-producing plant names in South Kalimantan

No	Banjar Lexicon	Indonesian Lexicon	Scientific Name	Characteristic
1	*Layung/ lahung* (red durian)	*Lahung*	*Durio dulcis*	The trunk is hard and anatomical, like a durian tree, and the fruit is red.
2	*Hambawang*	*Bacang*	*Mangifera foetida Lour*	The trunk of *bacang* is anatomically hard, like that of a tall and large mango tree.
3	*Ramania*	*Gandaria*	*Bouea macrophylla Griff.*	The marian plum has an anatomy like that of a mango tree with pointed broad leaves and small round fruits.

4.1.2. Lexicon of Swamp Plants in South Kalimantan

Table 2. The lexicon of fruit-producing plant names in South Kalimantan

No	Banjar Lexicon	Indonesian Lexicon	Scientific Name	Characteristic
1	*Rumbia*	*Pohon sagu*	*Metroxylon sagu*	Sago resembles the anatomy of a coconut. Only the trunk is shorter.
2	*Purun*	*Purun*	*Lepironia articulate*	Water chestnut is plant that has a thin long shape.
3	*Bamban*	*Bamban*	*Donax caniforms)*	The stems are long and thin, with a green color, which is higher than *purun*.
4	*Nipah*	*Nipah*	*Nypa fruticans*	*Nipa* palm has an anatomy similar to sago with square fruit

4.1.3. The Lexicon of Wood-Producing Plants in South Kalimantan

Table 3. Lexicon of wood-producing plants in South Kalimantan

No	Banjar Language	Indonesian Language	Scientific Name	Characteristic
1	*Jingah*	*Rengas*	*Gluta Renghas*	*Rengas* and stems are hard and high. Sap causes itching of the skin. They typically grow on river banks.
2	*Ulin*	*Ulin/kayu besi*	*Eusideroxylon zwageri*	Ironwood has a solid trunk with a height of tens of meters. It grows on dry land.
3	*Lurus*	*Sungkai*	*Peronema canescens*	*Sungkai* has a hard trunk. It grows in the highlands. It can be up to tens of metres in height.

4.1.4. Lexicon of Spice Plant in South Kalimantan

Table 4. Lexicon of spice plants in South Kalimantan

No	Banjar Lexicon	Indonesian Lexicon	Scientific Name	Characteristic
1	*Janar*	*Kunyit*	*Curcuma*	This is a turmeric rhizome. Each stem had one green elongated leaf. The tubers are yellow.
2	*Sahang*	*Merica*	*Latin Piper nigrum*	Pepper. The leaves were round, with sharp edges, and fibrous. The fruit is small and round.
3	*Kayu Manis*	*Kayu Manis*	*Cinnamomum verum*	The cinnamon has a slender trunk. The shoots were slightly reddish in color. Stem petals have a distinctive aroma, with a slightly sweet and spicy taste.

4.1.5. The Lexicon of Decorative Plants in South Kalimantan

Table 5. The lexicon of decorative plants in South Kalimantan

No	Banjar Lexicon	Indonesian Lexicon	Scientific Name	Characteristic
1	*Anggrek bulan*	*Anggrek bulan*	*Phalaenopsis amabilis*	Moon orchid. Leaves were long and green in shape. They usually grow on tree trunks. The flowers had five petals and the pistils were yellow.
2	*Kananga*	*Kenanga*	*Cananga odorata*	Cananga, hard trunk with yellow and fragrant petals
3	*Lukut*	*Pakis sarang burung*	*Asplenium nidus*	Bird's nest fern: Long-leaved, blooming, and without stems. The roots are black and stick to a tree.

4.1.6. The Lexicon of Tuber-Producing Plants in South Kalimantan

Table 6. The lexicon of tuber plants in South Kalimantan

No	Banjar Lexicon	Indonesian Lexicon	Scientific Name	Characteristic
1	*Gumbili kayu*	*Singkong*	*Manihot esculenta*	The cassava petiole has a pointed square shape. The tubers are white. Stem height can reach more than three meters.
2	*Gumbili layap*	*Ubi rambat*	*Ipomoea batatas L*	Yam is a vine plant. The leaves are square green. This tuber has colors such as purple, orange, and beige.
3	*Kaladi*	*Talas*	*Colocasia esculenta L.*	Taro is rodless. The stalk was similar to a midrib with green, heart-like leaves. This Plant has tubers.

4.1.7. The Lexicon of Plant Names of Indirect Consuming Fruits in South Kalimantan

Table 7. The plant lexicon of indirectly consuming fruits leksikon

No	Banjar Language	Indonesian Language	Scientific Language	Characteristic
1	*Hanau*	*Enau*	*Arenga pinnata*	The sugar palm has a large trunk and is high. Black fibers covered the stem at the tip of the shoots. The midrib is similar to the coconut, but the leaves are broader and stiff.
2	*Kalangkala*	*Kalangkala*	*Litsea garciae*	Boreno avocado hard stems with many branches on the display. All fruits were along the branches.
3	*Patikala*	*Kecombrang*	*Etlingera elatio*	wild ginger, the leaves are elongated. The fruit was round, square, and clustered in one stalk. The colour is red.

4.1.8. The Lexicon of Names of Vegetable-Producing Plants in South Kalimantan

Table 8. The lexicon of vegetable plants in South Kalimantan

No	Banjar Language	Indonesian Language	Scientific Name	Characteristic
1	*Ginjir*	*Genjer*	*Limnocharis Flava*	Yellow velvetleaf lives in water or swampland and has a leaf shape similar to that of water hyacinth.
2	*Susupan banyu*	*Putri malu air*	*Mimosa pudica*	The sensitive plant has an anatomical resemblance to Mimosa pudica on land.
3	*paku*	*Pakis*	*Stenochlaena palustris*	The fern has a long frond with toothed margins. It grows in areas with a sufficient water content.

4.2. Ethnobotanical Value from the Benefit Aspect of Plants in South Kalimantan

Ethnobotany has been used to determine the use of plants by humans. It has conservation and life value (Silalahi, 2020). Ethnobotany has the benefit of preserving public knowledge of environmental utilization based on local cultural values (Alfayed & Riefani, 2022). Modern science is inseparable from traditional science in the natural environment (Hakim., 2014). These endangered and surviving plants in the Banjar settlements are beneficial for the people around them. This benefit is derived from the legacy of local knowledge from previous people from generation to generation. Plants with these characteristics have beneficial properties based on Banjar cultural values, among others.

Linguistic Aspect

Based on these findings, various names of plants threatened extinction, and some did not. The names of the plants in the Banjar language can have similarities or differences. The names of these plants include *layung/lahung, papakin/pempakin ramania/gandaria, ulin/ulin* and others. This lexicon may disappear if the plants become extinct. In addition, the description in the local language and the plant name with its benefits will slowly disappear.

Ethnomedicine aspects

Plants are not only for one benefit in South Kalimantan, but can also have another benefit. One example is cassava, in which the shoots of fresh vegetables and tubers are used to process various traditional Banjar dishes. Another benefit is that young tubers are valuable for the treatment of stomachaches. Spice plants can also be used to support health.

Food aspect

Besides non-consumption needs, there are plants that can meet food needs, such as *layung 'lahung'* and *papampakin lai*, which have a delicious taste.

Clothing Aspect

Humans require complements in clothing, jewelry, and clothing. Clothing-supporting plants, such as *purun*, are applicable as basic materials for crafts, such as bags, hats, and mats.

Residential Aspect

Humans need a place to live with all the supporting equipment. Examples of this include ironwood and straighwood. These two types of wood can be part and equipment of a house, such as chairs, tables, and cabinets. Likewise, with sago palms, fronds can be used as simple building materials.

Decorative Aspect

The parts of the plants can be utilized for ornamental plants, such as 'bird's nest ferns.' In addition to being an ornamental plant, the cananga is also used to decorate Banjar's wedding clothes.

Tradition Aspect

Most Banjars have various traditions. To support this tradition, a variety of plants such as cananga are used for grave pilgrimages.

The ethnobotanical value of the beneficial aspects of this part of the plant can be seen in more detail in Table 9.

Table 9. Ethnobotanical value from the benefit aspect of plants in South Kalimantan

No	Characteristics	Examples	Benefits	Parts of Plants
1	Fruits producing plants	*Layung* *'Durio dulcis'* *Pampakin* *'lai'*	Food Boards Food Boards	Fruit Trunk Fruit Trunk
2	Swamp Plants	*Rumbia* *'sago'* *Purun* *'Lepironia articulata*	Animal feed Food Board Clothing	Trunk Trunk Stem and Leaves Trunk
3	Wood producing plants	*Ulin* *'Eusideroxylon zwageri'* *Lurus* *'sungkai'* *Peronema canescens*	Board Board	Trunk Trunk
4	Spice Plant	*Janar* *'kunyit'* *Curcuma* *Sarai 'serai'* *Cymbopogon nardus*	Spice (food) Concoction (ethnomedicine) Spice (food) Concoction (ethnomedicine)	Tuber Trunk and Leaves
5	Decorative plants	*'kenanga'* *Cananga Odorata* *Lukut'pakis sarang burung'* *Asplenium Nidus*	Tradition ceremony Decorative plant	Flower Whole part
6	Tuber	*Gumbili* *Kayu 'singkong'* *Manihot esculenta* *Kaladi'talas'* *Colocasia esculenta*	Food Ethnomedicine Food	Shoot and Tuber Young Tuber Tuber
7	Vegetable	*Ginjir* *'genjer'* *Limnocharis flava* *Water mimosa* *'putri malu air'*	Food Food	Stalk and Leaves Leaves
8	Plant of Indirect Consuming Fruits	*Hanau'enau'* *Arenga pinnata* *Patikala* *'kecombarang'* *Etlingera elatio*	Food Food Vegetable/side dish	Fruit sap Flower Fruit

5. CONCLUSION

Plants play a significant role in the lives of Banjar people. This role is evident from the value of its usefulness in ethnobotanical theory. That is, the name of the plant was identified. Sixty plant names were used in this study. The ethnobotanical value of their usefulness includes linguistics, ethnomedicine, clothing, shelters, food, decorations, and traditions.

The ethnobotanical value of the South Kalimantan plants is a linguistic aspect, namely, preserving the plant lexicon in the Banjar language. In ethnomedicine, this plant can be used to maintain health in the form of a decoction and stomach medicine (*gumbili anum* wood 'Young Tuber'). Furthermore, this part of the plant could be a source of fruit. Apart from that, parts of this plant can be used as shelter materials for humans. Next is decoration, which can be used as an ornamental plant at home. Lastly, Tradition. This plant is part of traditional ceremonies.

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