Ecolexical Treasures of Dayak Ngaju Traditional Medicine

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Abstract. As local beliefs, both (shamans and shamanic practices) cannot be judged from the point of view of scientific rationality because they have their reason and logic which is called rationality behind irrationality. This article describes terms in the Ngaju Dayak language related to plants used for medicinal purposes by the ethnic community. Data were collected through participant and non-participant observations and interviews and analysis of ritual spells uttered by traditional healers. Three important elements in the relationship between ethnic culture and ethnobotanical language in Dayak Ngaju were identified, namely (1) the names of medicinal plants and their components and functions as medicine; (2) terms used for plants based on their ecology: color, place of growth, shape, and/or gender; (3) socio-cultural values expressed in local wisdom and their implications for the utilization and preservation of plant life in the area.

Keywords*:* Ecolinguistics, Ecolexical, Medicinal Plants, Ngaju Dayak Language

1. Introduction

Traditional knowledge possessed by one community group will differ from one another. It is influenced by the natural environment around it. Likewise in terms of treatment. Knowledge about medicine and in terms of utilizing plants in the environment is a cultural element that arises from individual experience. Individual experiences that are the result of interactions with their environment. This knowledge is then passed down from generation to generation which aims to maintain life. Whether we realize it or not, humans will always depend on the environment to sustain their lives. and vice versa.

Perceptions about health, illness, and how to treat disease depend on the natural environment around them. Humans always try to keep their lives and their lives based on the social and natural environment around them. Humans will use anything (natural materials) in their environment in the form of plants, animals, and minerals for the treatment of disease.

Kalimantan is famous for its biodiversity. This biological wealth has been widely used by the community, one of which is as an ingredient in traditional medicine. Knowledge of traditional medicine using plants has been passed down from generation to generation.

Foster & Anderson (2009) [1] state that traditional medicine views disease as caused by two factors, disease caused by a character (agent) who is referred to as personalistic and disease

ICON LATERALS 2022, November 05-06, Malang, Indonesia

DOI 10.4108/eai.5-11-2022.2329455

caused by disruption of the body's balance (naturalistic). The same thing happened to the Ngaju Dayak community in Palangka Raya, Central Kalimantan. The Ngaju Dayak people still believe in health problems caused by the combination of these personalistic and naturalistic factors. This has an impact on the use of traditional medicine as an alternative in an effort to survive and be healthy. The Ngaju Dayak people believe that illness or disease is not only an individual biological problem, but is holistically related to the natural, social, and even religious environment. This is what underlies the methods of treatment that are carried out. Treatment using medicines made from plants and animals that exist in the environment and certain rituals.

Research on the use of plants as ingredients for traditional medicine has been carried out by many experts. However, their research is mostly in the fields of ethnobotany and ethnopharmacology. There are still few who identify it through ecolinguistic or anthropolinguistic studies. Among the studies related to ethnobotany is the research of [2], [3] [4] and [5]; research on medicinal plants in Central Kalimantan was conducted by [6], [7] and [8], [9]. Several studies on treatment from a linguistic perspective were carried out by [10], [11] ,[12], [13], [14], [15], [16], and [17].

Wandik (2017) examined the Forms and Categories of Ecolexical Treasures of Traditional Medicine Knowledge of the Yali Tribe of Papua: Ecolinguistic Studies. Through this research, he analyzed the ecolexical form of knowledge of traditional Yali medicine. He divides the ecolexical form into two namely polymorphemic and monomorphemic. Apart from that, he also explained the skills of the Yali people in processing traditional medicines. Wandik is worried about the extinction of biodiversity as well as its ecolexical forms due to diminishing attention. This research focuses its analysis on lexical forms and leaves traditional medicine as a cultural activity.

Sugiarto & Wulansari (2018) describe the form and meaning of the drug lexicon in the traditional medicine practices of the Sumbawa people. The approach used in this research is a qualitative approach. He also classifies traditional Sumbawa medicines into three major groups, namely (1) medicinal ingredients from plants and or spices, (2) animals, and (3) prayers. The form of medicine made from plants has 10 terms, namely (1) ai angat, (2) stiff, (3), bush (4) temar, (5) parapa (6) shampooing, (7) apis, (9) lalap , and (10) lala oil. Furthermore, animal-based medicines do not have specific terms, several animals are used as medicinal ingredients, namely bats, horses, geckos or lizards, eels, deer and goats. While the medicine is in the form of prayer which is used in Arabic which is partly sourced from the Al-Quran.

Suganda, et al (2018) [13] describe ethnomedicine vocabulary in traditional Sundanese medicine from an anthropological linguistic point of view. The analysis is divided into lexicon classification based on medicinal ingredients, traditional disease names, and cultural symptoms of ethnomedicine practices in traditional medicine. The results showed that (1) the ethnomedicine vocabulary in traditional Sundanese medicine was classified based on the lingual form into two, namely words and phrases; (2) the ethnomedicine vocabulary in traditional Sundanese medicine has three cultural reflections, namely the harmonization of society and nature, the harmonization of religious values, and the economic reflection; (3) the existence of community knowledge on traditional medicinal ingredients, including cultural heritage that has been passed down from generation to generation from the older generation to the younger generation. This study discusses lexical forms and the relationship between these lexical forms and the medicinal culture of the Sundanese people. The study of the Ngaju

ecolexical will have similarities with the study conducted by Suganda, et al. Even so, different objects will make the conclusions of these two studies different.

Luardini, et al. (2019) [17} seeks to document the intimate relationship of the Ngaju people in Central Kalimantan with their environment. This can be seen from the language used in traditional medicine culture. For the Dayak people the environment is not just nature; nor is it different from the metaphysical world: the two are inseparable. It is hoped that this initial research on the language of ethno medicinal plants will encourage further research to preserve etnopharmacological ecolinguistics among the Dayak and other communities. As traditional knowledge is lost and the natural environment is increasingly threatened, the lexicon of those who live in harmony with it will gradually diminish. As disclosed by Luardini, et al. that their research is the first step in the study of traditional Ngaju medicine, our research is a follow-up to that research. Nonetheless, these two studies are not completely the same. Research Luardini, et al. also discusses medical practices, in this case traditions related to spells. Meanwhile, our research only focuses on the ecolexical forms of plants used as medicine by the Ngaju people.

On the basis of this, this study will try to fill the gaps in existing research. This study will describe the knowledge of medicine that comes from plants that are known by the Ngaju Dayak community.

2. Method

This research combines two methodological approaches, namely quantitative and qualitative. Quantitative methods are used to classify and describe lexicon data based on their shape (words, phrases). The qualitative method is used to describe these lingual forms. This research is divided into three stages, namely the stage of providing data, the stage of data analysis, and the stage of presenting the results of data analysis. The stage of providing data is carried out using the see method [21] with the basic technique of tapping techniques. Some of the techniques used in this method include tapping and note-taking techniques. The data described in this paper are in the form of words containing the lexicon of traditional medicine ingredients and the lexicon of the names of traditional diseases in the Ngaju Dayak language. The analysis technique was carried out through several stages, including (1) identifying the data, (2) describing and classifying the data based on the lingual form, (3) describing the data. The data analysis stage was carried out by following the procedures of (a) data reduction, (b) data presentation, and (c) drawing conclusions. The stage of presenting the results of data analysis is done informally. The lexicon data is described using words so that it can be directly understood by the reader.

3. Results And Discussion

This study describes and classifies the ecolexical treasures of plants used as medicine in the Ngaju Dayak community in Central Kalimantan based on their lingual forms and the cultural meanings they contain. In addition, this study also describes the reflection of cultural phenomena that exist in these lexicons.

Overall, found 59 names of plants used as medicinal ingredients by the Ngaju Dayak community. Based on the lingual unit, the names of medicinal plants in the Ngaju Dayak language are grouped into two types, namely monomorphemic and polymorphemic. The polomorphemic forms are usually generic/genus names and the following element modifies the name by describing its characteristics, functioning as an adjective of an adjective phrase. These characteristics are usually color, shape, place, and/or gender.

No.	Leksikal Dayak Ngaju	Nama Latin	Utilization
1.	Penawar Gantung	*Tinospora crispa (L.) Hook.f & Th.*	medicine for fever, dysentery, skin problems, to diabetes
2.	Tekerek	*Eurycoma longifolia*	antimalarial, prevent breast cancer
3.	Alang-Alang	*Imperata cylindrical (L.) Beauv.*	overcome heart attack
4.	Bahantung	*Pachycentria constricta Bl.*	endurance
5.	Bahinis	*Licuala petiolulata*	diarrhea medicine
6.	Bajakah Bahenda	*Fibraura chloroleuca*	liver dysfunction
7.	Bajakah Kalawit	*Uncaria gambir Roxb*	prevent heart disease and obesity
8.	Baje	*Diplazium esculentum (Retz.) Swartz*	bloody urine medicine
9.	Balayan	*Merremia sp.*	treat warts
10.	Bante	*Randia grandis (Korth.) Val*	overcoming fever after childbirth
11.	Bawang Dayak	*Eleutherine palmifolia (L) Merr*	antiviral and stomach ache
12.	Bejakah Dangu	*Willughbeia coriacea Wallich*	diarrhea, fever, and itching due to allergies
13.	Bejakah Kamunda	*Dalbergia sp.*	treat vaginal discharge
14.	Belawan Biru	*Tristaniopsis whiteana (Griff.)*	diarrhea medicine
15.	Belawan Laki	*Tristaniopsis obovata (Benn.) Wilson & Waterhouse*	diarrhea medicine
16.	Bihak	*Alocasia indica Schott.*	fever medicine
17.	Bingkas Kruing	*Zyzyphus suluensis Merr.*	eye drops
18.	Buah Aciu	*Garcinia parvifolia (Miq.) Miq.*	back pain medicine
19.	Cermin Pilanduk	*Omalanthus grandifolius*	treat vaginal discharge
20.	Garising	*Mapania enodis (Miq.) Clarke*	diarrhea medicine
21.	Gusar	*Acorus calamus L.*	fever medicine
22.	Hambayau	*Adinandra sarosanthera Miq.*	space birth
23.	Jajangkit	*Ficus microcarpa L.f.*	space birth
24.	Janar Baputik	*Kaempferia rotunda L*	antidote
25.	Jelan Balruang	*Rhaphidophora sp.*	treat itching / sores on the skin
26.	Kalapapas	*Leea indica (Burm.f.) Merrill*	treat wounds
27.	Kamasulan	*Pternandra rostrata (Cogn.) Ohwi*	overcoming aches and pains
28.	Karamunting	*Melastoma affine*	eye drops
29.	Kasar Bake	*Diospyros foetida Bakh*	shortness of breath
30.	Bajakah Tampala	*Spatholobus littoralis Hassk*	heal wounds

31.	Kayu Malem	*Diospyros borneensis Herm*	tinea versicolor, ringworm
32.	Kemut	*Passiflora foetida L.*	treat back pain
33.	Kumpang	*Knema laurina (Bl.) Warb.*	stomach aches (bloating)
34.	Laban	*Vitex trifolia L.*	treat tonsils
35.	Mengkudu	*Morinda citrifolia L.*	clean dirty blood after childbirth
36.	Musisin Batu	*Rhodamnia cinerea Jack*	diarrhea medicine
37.	Nisip	*Wikstroemia sp.*	diarrhea medicine
38.	Paherak	*Garcinia celebica L.*	diarrhea medicine
39.	Paku Haruan	*Stenochlaena palustris*	antioxidant
40.	Penaga Jangkar	*Calophyllum inophyllum L.*	treat itching, scabs
41.	Puan	*Artocarpus anisophyllus Miq.*	heal burns
42.	Rambangun	*Euodia latifolia DC.*	facilitate breast milk
43.	Rasak Geleget	*Cotylelobium sp.*	treat wounds
44.	Rumput Hapit	*Nephrolepis falcata*	treat wounds, overcome cholesterol
45.	Sahang Burung	*Brucea javanica (L) Merr.*	antidiabetes
46.	Sahang Behum	*Luvungan sarmentosa*	increase sexual arousal
47.	Samalu	*Trema cannabina Lour.*	treat wounds
48.	Sapkuwung	*Macaranga gigantea M. A.*	diarrhea medicine
49.	Selintup Nyaluk	*Connarus semidecandrus Jack*	clean dirty blood after childbirth
50.	Sirih Bahandang	*Piper crocatum*	lower cholesterol, prevent stroke, gout
51.	Sisik Naga Bahandang	*Drymoglossum piloselloidis*	treat dysentery, bleeding gums, external wounds, and itching of the skin.
52.	Tabat Barito	*Ficus deltoidea*	reduce the risk of tumor disease
53.	Tampang	*Artocarpus glauca Bl.*	treat toothache
54.	Tebu Bahandang	*Saccharum officinarum L*	launch the digestive system
55.	Teken Parei	*Helminthostachyszeylanica*	increase male vitality
56.	Tungkun	*Viscum orientalle Willd.*	treat back pain
57.	Tutup Kebalik	*Diospyros kerthalsiana Hiern.*	diarrhea medicine
58.	Uru Handalai	*Phyllanthus niruri L*	antioxidant, anti-inflammatory and antibacterial
59.	Uwe Nyame	*Flagellaria indica L.*	treat intestinal worms

Table 1. The Ecolexical Treasures of Dayak Ngaju Medicinal Plants

3.1 Echolexical Forms of Dayak Ngaju Medicinal Plants

This section will describe the plant lexicons used as medicinal ingredients in the Ngaju Dayak language based on their linguistic units. Fifty-nine lexicon which will be described as follows.

No.	Dayak Ngaju Lexical	Form
1.	Penawar Gantung	Nominal Phrase
2.	Alang-Alang	Nominal Phrase
3.	Bajakah Bahenda	Nominal Phrase
4.	Bajakah Kalawit	Nominal Phrase
5.	Bawang Dayak	Nominal Phrase
6.	Bejakah Dangu	Nominal Phrase
7.	Bejakah Kamunda	Nominal Phrase
8.	Belawan Bini	Nominal Phrase
9.	Belawan Laki	Nominal Phrase
10.	Bingkas Kruing	Nominal Phrase
11.	Buah Aciu	Nominal Phrase
12.	Cermin Pilanduk	Nominal Phrase
13.	Janar Baputik	Nominal Phrase
14.	Jelan Bahuang	Nominal Phrase
15.	Kasar Bake	Nominal Phrase
16.	Bajakah Tampala	Nominal Phrase
17.	Kayu Malem	Nominal Phrase
18.	Musisin Batu	Nominal Phrase
19.	Paku Haruan	Nominal Phrase
20.	Penaga Jangkar	Nominal Phrase
21.	Rasak Geleget	Nominal Phrase
22.	Rumput Hapit	Nominal Phrase
23.	Sahang Burung	Nominal Phrase
24.	Saluang Belum	Nominal Phrase
25.	Selintup Nyahuk	Nominal Phrase
26.	Sirih Bahandang	Nominal Phrase
27.	Sisik Naga Bahandang	Nominal Phrase
28.	Tabat Barito	Nominal Phrase
29.	Tebu Bahandang	Nominal Phrase
30.	Teken Parei	Nominal Phrase
31.	Tutup Kebalik	Nominal Phrase
32.	Uru Handalai	Nominal Phrase
33.	Uwe Nyame	Nominal Phrase
34.	Tekerek	Nomina
35.	Bahantung	Nomina
36.	Bahinis	Nomina
37.	Baje	Nomina
38.	Balayan	Nomina
39.	Bante	Nomina
40.	Bihak	Nomina

41.	Garising	Nomina
42.	Gusar	Nomina
43.	Hambayau	Nomina
44.	Jajangkit	Nomina
45.	Kalapapas	Nomina
46.	Kamasulan	Nomina
47.	Karamunting	Nomina
48.	Kemut	Nomina
49.	Kumpang	Nomina
50.	Laban	Nomina
51.	Mengkudu	Nomina
52.	Nisip	Nomina
53.	Paherak	Nomina
54.	Puan	Nomina
55.	Rambangun	Nomina
56.	Samahu	Nomina
57.	Sapkuwung	Nomina
58.	Tampang	Nomina
59.	Tungkun	Nomina

Table 1. The Ecolexical Form of Dayak Ngaju Medicinal Plants

Overall, 59 plant lexicons were found that were used as medicinal ingredients by the Ngaju Dayak community in Central Kalimantan. These lexicon can be seen in table 2.

All data obtained are classified based on the point of view of the lingual form into two forms, namely word form and phrase form. Based on the lingual form, there are 33 lexicon (56%) in the form of phrases and 26 lexicon (44%) in the form of words.

Diagram 1. Lexicon of Dayak Ngaju Medicinal Plants

Medicinal plant lexicons are described based on the number of syllables that form them, grouped into 6, namely lexicon with 2 syllables, 3 syllables, 4 syllables, 5 syllables, 6 syllables, and 7 syllables. From 59 categorized lexicon, it can be seen through the following diagram.

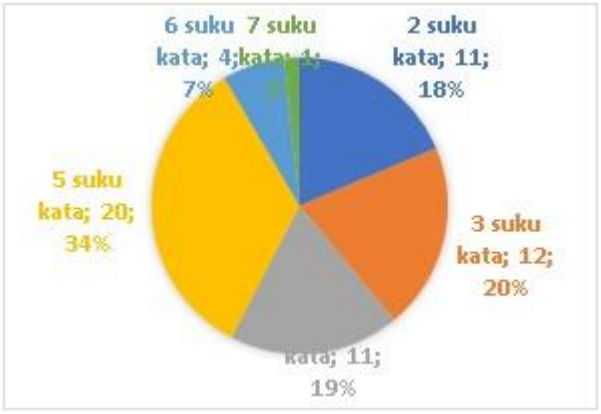

Diagram 2. Lingual Form of Dayak Ngaju Medicinal Plants

Based on the data obtained, there are seven types of data based on the number of syllables used, namely the 2-syllable lexicon (11/18%), the 3-syllable lexicon (12/20%), the 4-syllable lexicon (11/18%), lexicon 5 syllables (20/34%), lexicon 6 syllables (4/7%), and lexicon 7 syllables (1/2%)

3.2 Culture of Utilization and Management Plant in The Forest

Central Kalimantan is a region rich in tropical rain forests that are still remaining in the world. In this area the community still upholds local wisdom related to nature and the environment. The relationship between Ngaju people and the land/earth and trees/forests is very close and all of this is expressed in the adat system. In addition to involvement and togetherness as mythical creatures as we have seen from the myths of creation, there is also a feeling of gratitude to the earth and forests so that they do not lose their power of growth which results in human misery. Therefore, treatment or provisions are needed that regulate so that balance and harmony are maintained. Basically, the Ngaju people have never dared to destroy land and forests intentionally. Forests, earth, rivers, and all the environment is part of life and life. Before taking something from nature, Ngaju people always give first. For example, if you want to open up new land, especially by working on virgin forest, certain conditions must be met.

The Ngaju culture views humans, the natural environment which also includes animal and plant life, and social relations between humans as a gift from God. Because life and life are gifts, humans must make good use of them, apply and behave towards life with good behavior and attitudes. This includes maintaining a relationship with nature and its contents. Humans are given the right to utilize the natural resources around them. In addition, humans are also given the obligation to maintain life and the existing balance of nature. Therefore, whenever there is a desire to take advantage of existing natural resources, humans are always obliged to ask permission, excuse me, from the nature that they want to use. In addition, humans also have an obligation to give life to the natural environment. The gift of life and permission to

use it is embodied in tradition. Some of the traditions related to maintaining the relationship between humans and nature include *mampanakan sahur lewu, mamapas lewu, manyanggar, stone feed,* and *manajah antang.*

Mampakanan sahur lewu is a ceremony meant to feed the village guards where they live. *Mamapas lewu* is a ceremony to cleanse the village of evil spirits as well as to thank nature for its benefits to humans. *Manyanggar* is a ceremony when opening a new business in a new environment. It is a tradition to ask permission from the ancestral spirits who inhabit the location so that what they try to get good results. The *pakanan batu* tradition is an expression of gratitude for the agricultural/plantation equipment used. The Ngaju people believe that these tools contain gana (soul). Meanwhile, *manajah antang* is a means to ask the ancestral spirits for directions about a new, better place to work, for example a place to find fish or grow crops. The function of the ritual that places the soul as an inhabitant of the natural surroundings is also understood by the community as a pavilion which is usually found in dense forests and is commonly called a *pahewan forest*. Now, the *pahewan forest* is understood by the community as a customary conservation forest that functions as a buffer for environmental damage and the extinction of various biological resources.

In terms of identifying and naming plants in their environment, the Ngaju people always remember their beliefs, religious values, and the environment. This is one of the efforts to save and protect these plants. Here are some examples of plant names and their value to the Ngaju people.

***Dawen Sawang* (Sawang Leaves)**
Dawen sawang is a symbol of life for the Ngaju people, which means that this leaf contains religious value because the *dawen sawang* is considered a sacred element, as a means of repelling reinforcements in the Ngaju community. Apart from that, the Ngaju people also believe that the ruler of *dawen sawang* is *Jata Lunjung Sawang* who lives in the upper world, the land of *Batu Nindan Tarung*. *Dawen sawang* is also said to be a promise tree because it is used during the marriage ritual for the Ngaju tribe. The function of *dawen sawang* is as a mediation tool in medical ceremonies which are believed to be able to cure diseases. This *dawen sawang* is not only used in medicinal ceremonies, but in the *mamapas lewu* ceremony (ceremony of rejecting reinforcements) it is also used *dawen sawang* which is believed to be able to keep a person away from bad influences or what is commonly called *'sial kawe'* in Ngaju terms.

***Uwei* (Rattan)**
Uwei or what is known by the public in general is rattan. According to the beliefs of the Ngaju people, uwei is the embodiment/change of *Mangku Amat Sangen's* hair, which is used in death ceremonies and the *manenung* ceremony (ceremony asking for instructions). *Uwei* has the same symbol as the *dawen sawang*, which is a symbol of life and strength of the Ngaju people. *Uwei* also contains religious value because the people believe that the *uwei* is able to provide directions for all of them when performing the *manenung* ceremony.

***Suli* (Galangal Stem)**
Suli is a symbol of strength against evil spirits, which means that people's belief in objects is strong enough so that they are classified as symbols in a religious context. According to the Ngaju people, *suli* can prevent someone from being disturbed by supernatural beings in the water. *Suli* functions as a mediation or means of war in the *tiwah* ceremony which is believed to be able to expel *kanarihing ganan danum* (mystery in water).

Paku Haruan

Paku Haruan fern is a fern plant which is the main food for the *haruan* fish. Central Kalimantan's swamp forest is an ecological region of this plant. This plant grows vines in swamp forests after logging, especially in fresh water, brackish water, and mangrove forests. This type of swamp is also an environment for the growth and life of *Haruan*. That is why the plant, which has the Latin name *Stenochlaena palustris*, is called a *paku haruan* by the Ngaju people. In some areas it is also called *kelakai, kalakai, lamiding*.

Bajakah

Bajakah, is the term used by the Ngaju people to refer to vines that live wild in the forest. *Bajakah* does grow in vines, crossing from one big tree branch to another big tree branch. *Bajakah* is in the form of a single tree trunk, with various colors. Several types of *Bajakah* are known to have medicinal functions, including *Bajakah Bahenda* (yellow), *Bajakah Kalawit* (orangutan) (*Bajakah* where orangutans hang), *Bajakah Tampala, Bajakah Lamei, Bajakah Dangu, and Bajakah Kamunda*.

Cultural linguistics views that language can be used as an instrument to understand culture (cultural understanding) because language can be seen as a cultural resource and its lingual practice is considered a cultural practice. In Duranti's view (2002) linguistic anthropology as a study places language as a cultural resource and speech as a cultural practice (study of language as a cultural resource and speaking as cultural practice). It reveals that language practice is a reflection of the culture of a society. Culture as shared knowledge can serve as an instrument to explain the meaning of speech as a cultural practice. In line with this, Boas (in Duranti, 2002) states that language is the most important manifestation of the mental life of its speakers. That means that the cultural reality of the community can be seen from the lingual practices that exist in a society. On that basis, every lingual reality will store a cultural reflection of the mentality of the speaker. Overall, the lexical treasures of the Ngaju Dayak medicinal plants have at least three cultural reflections, namely the harmonization of society with nature, the harmonization of religious values to nature, and a reflection of the economic values possessed by the community. The Ngaju Dayak people really take care of the natural wealth they have and use it as an ingredient/media for traditional medicine. These values are also reflected in every process of using these natural materials (plants). It begins when taking these materials from nature, usually starting with certain ceremonies or prayers in the form of mantras. Not just anyone can take and use these natural materials, especially those that still grow wild in the depths of the forests of Central Kalimantan. This is done as an effort to always maintain the natural wealth that is owned and maintain and preserve the culture of the people who are always close to nature. The use of natural materials as a medium for traditional medicine at least also shows economic values in the life of the Ngaju Dayak community.

4. Conclusion

Lexicons of medicinal plants in the Ngaju Dayak language based on their lingual form consist of phrases and words that can be grouped into 6, namely lexicon with 2 syllables, 3 syllables, 4 syllables, 5 syllables, 6 syllables, and 7 syllables. . The lexicon of Dayak Ngaju medicinal plants also reflects the harmonization of society with nature, the harmonization of religious values towards nature, and a reflection of the economic values possessed by the community.

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