

Ethnobotanical Study of Pitcher Plant (*Nepenthes* sp.): A Medicine for Diarrhea and Gastroenteritis of Dayak Sampit People

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ABSTRACT

The Dayak Sampit people believe that pitcher plant is a medicine for diarrhea and gastroenteritis. This study aims to depict the ethnobotanical study of pitcher plants in the tradition of Dayak Sampit people of Singsingan Hamlet, Tehang Village, Parenggean Sub-district, Kotawaringin Timur Regency. The research method is descriptive qualitative with data collection technique of interview with key informants. The key informants include gatherer/batra at Singsingan Hamlet Tehang Village, pitcher plant users, and the village elders. The informants are selected using purposive sampling method. The research results suggest that Dayak Sampit people utilize and believe that pitcher plant roots could cure diarrhea and gastroenteritis. The Dayak Sampit people call the plant as Tabeko due to its morphological form that resembles a teapot. The plant utilization as a medicine for diarrhea and gastroenteritis by Dayak people of Singsingan hamlet is observed from the root taking and potion making stages. The plant has phytochemicals, plumbagin, 2-methylnaphthazarin, octadecyl caffeate, isoshinanolone, and droserone that indicate reaction as anti-malaria. The results suggest that pitcher plants have a potential as a medicine for diarrhea and gastroenteritis.

Keywords: Dayak Sampit, Ethnobotany, Pitcher Plant

1. INTRODUCTION

Human daily life activities utilize plants for clothing, food, shelter, and medication. This examines through ethnobotany. Ethnobotany is knowledge of reciprocal relationship between local communities and their natural environment, which is a knowledge system of plant natural resources [7]. According to [1], the role of a plant in the community's tradition can be studied through ethnobotany studies.

The Dayak Sampit people reside in Central Kalimantan Province, Kotawaringin Timur Regency, Parenggean Sub-district, Tehang Village, Singsingan hamlet. Singsingan hamlet is a village that still maintains the Dayak Sampit people's cultural tradition. This region also has a large forest area as a place for planting, farming, and collecting various live necessities, such as woods, rattan, jungle fruits, and traditional medicinal plants.

Many medicinal plants that are believed by the Dayak Sampit people grow in the Singsingan hamlet forests. One of the plants is pitcher plant that is used as a medicine for diarrhea and gastroenteritis. Documentation is required to prevent the erosion of knowledge of the medicinal plant utilization. Local knowledge documentation in the utilization of plant resources will support the preservation of valuable medicinal diversity [5].

Tradition of plant utilization has been scientifically proven; yet, there are many of them are scientifically unrecorded and not distributed through publication [9]. It indicates the necessity to study and document the medicinal plants through an ethnobiological study so that the plant utilization is preserved.

This study aims to depict an ethnobotanical study of pitcher plant utilized by the Dayak Sampit people of Singsingan Hamlet, Tehang Village, Parenggean

Sub-district, Kotawaringin Timur Regency. The study results are expected to provide information on medicinal plants for diarrhea and gastroenteritis diseases.

2. MATERIALS AND METHODS

The research type was explorative descriptive with PEA (Participatory Ethnobotanical Appraisal) approach. Data collection technique used observation of pitcher plants and structured interview. The research main key informants were gatherers/*batra* at the Singsingan Hamlet Tehang Village, plant pitcher users, and the village elders. The informants were selected using purposive sampling method. The observation was a direct observation on the pitcher plant locations in the forest of Singsingan Hamlet, Tehang Village, Perenggean Sub-District, Kotawaringin Timur Regency to study the botany. The interview was conducted directly with the Dayak Sampit people to identify the pitcher plants believed to be used for medicine. The interview activity carried out using ethnobotanical survey questionnaire to probe the pitcher plant anthropology and linguistics.

3. RESULT AND DISCUSSION

Based on the observation results, the pitcher plant is a plant with climbing stem, height of 8 m, and slender shape with smooth surface. The leaves have lanceolate shape with length of 5-12 cm and width of 1-4 cm, and acutus leaf tip. Pitcher is an ovoid plant that narrows and slopes at the bottom. It is cylindrical and narrowing towards the lip (peristome), and it has brownish red green color. The plant is illustrated in Figure 1. The plant's scientific name is *Nepenthes* spp. Based on the flowering plant (magnoliophyta) classification, the *Nepenthes* spp classification is as follows [2].

Kingdom	: Plantae
Division	: Magnoliophyta
Class	: Magnoliopsida
Sub-class	: Dilleniidae
Order	: Nepenthales
Family	: Nepenthaceae
Genus	: <i>Nepenthes</i>
Species	: <i>Nepenthes</i> spp.

The Dayak Sampit tribe people call the pitcher plant as *Tabeko*. It means a teapot in Dayak language. The naming is based on the similarity of the plant's flower morphological shape to a teapot. According [4] the naming is based on an analogy, namely giving

a name based on a similarity or correspondence between two different objects or things.



Figure 1. Pitcher Plant. Source: Personal Documents

The observation and interview results signify that plant pitcher is believed by the Dayak Sampit tribal people as a medicinal plant for diarrhea and gastroenteritis diseases. Part of the plant used as a medicine is the root that is boiled and the stew is drunk.

The pitcher plant roots are believed by the people as a medicine for diarrhea and gastroenteritis. A research result by [3] indicated the pitcher plant root potential as anti-malaria. The research results suggested that the pitcher plants contained the phytochemical plumbagin, 2-methylnaphthazarin, octadecyl caffeate, isoshinanolone, and droserone. It implied that the roots had potential as a medicine for diarrhea and gastroenteritis.

The Dayak people at Singsingan hamlet took medicinal plants in the forest with specific requirements. The people believed that by doing this it will provide efficacy to the plants. Regarding the pitcher plants, it required permission to the plants before taking them, which is by sprinkling salt around the bottom part of the plant and putting some nails. It carries out as offerings to the medicinal plants to be taken so they could be used as a medicine for diarrhea and gastroenteritis diseases.

The Dayak Sampit people have a belief in taking medicinal plants in the forest. The procedure to take the pitcher plants by giving salts and nails is considered as replacing the plant in the nature. The salt and nails are signs that the plant will be used as a medicine.

The utilization of pitcher plant root as a medicine for diarrhea and gastroenteritis by the Dayak Sampit people used the following steps:

1. They search for pitcher plant (*Nepenthes sp.*) in the forest or around the farm. The chosen pitcher plant is a mature pitcher plant that already has a bag. The selected pitcher plant bag is red.
2. If founded, then they need to ask permission to the plant for healing using verbal cues.
3. In the process, they prepare salt in sufficient amount to spread them around the plant roots and some nails to put in the same locations.
4. After a while, they dig the plant to take the root.
5. Once the root taken, it cleaned from dust and boiled using enough water.
6. The stew is left to cool and the color becomes red. The potion is taken three times a day after meal.

People at Singsingan hamlet utilize medicinal plants to cure various diseases as it considers as much better and has no side effects. The plants also function as natural potion to cure the diseases. This belief has been maintained for generations. They are certain that the nature has its own power given by God. According to [6] the switching of society to the traditional medicine is due to its cheaper price, easy-to-obtain ingredients, and plants have more than one pharmacological effect thus it beneficial for treating degenerative and metabolic diseases without side effects.

The aforementioned explanation is proof that the belief of the Dayak people at Singsingan hamlet could produce the potentials and benefits of medicinal plants. The bioactivity potentials reflected and the traditional knowledge indicate that the medicinal plants in the forest could be utilized and preserved if the belief is maintained. It could be developed as cultural tradition richness and local wisdom of the Dayak people and they will be known for their abundance of medicinal plants.

Pitcher plant preservation carries out by utilizing them as a family medicinal plant planted in the yard. [8] opines that family medicinal plant preservation and cultivation can be a medium to increase productivity and income of a region and as a first aid for sick people before they visit professional health workers.

4. CONCLUSION

The Dayak Sampit people in Singsingan Hamlet, Tehang Village, Parenggean Sub-District, Kotawaringin Timur Regency utilize pitcher plants or locally known as *tabeko* as a medicine for diarrhea and gastroenteritis diseases. Part of the plant used as a medicine is the root. The roots are proven to have anti-malarial properties.

The people utilize the plant root by boiling the root and drink the stew. They have specific procedure to obtain the plant, which is a tradition in taking medicinal plants in the wood and it has been done since their ancestors.

The research results are expected to preserve the Dayak sampit people tradition as their cultural tradition richness. The communities could preserve the existence of medicinal plants by conducting medicinal plant planting in their yard.

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