

Ethnobotanical Study of Forest Noni Plants (*Morinda trimera*) In The Banjar Ethnicity in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency

Rina Septiyana, Sari Indriyani

Biology Education Department, Faculty of Education and Teacher Training, UIN Antasari Banjarmasin
Jl. Jenderal Ahmad Yani Km 4,5 Banjarmasin, Indonesia. Tel. +6287747646681, Fax. (0511) 3274492.

Corresponding author*

rinaseptiyana2@gmail.com

Abstract: Ethnobotany is the science that studies the relationship between humans and plants. The use of Forest Noni (*Morinda trimera*) in the Banjar ethnicity is related to traditional medicine such as reducing fever and healing wounds by using boiled or crushed leaves. So the importance of ethnobotanical research on Forest Noni is to explore the potential of the forest noni, both from the aspects of botany, pharmacology, ecology, socio-anthropology, economy and linguistics. Because traditional knowledge passed down from generation to generation is an important part of local wisdom that needs to be preserved. This study aims to examine the ethnobotanical aspects of Forest Noni in the Banjar ethnicity in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency. The method in this study uses descriptive research showing the ethnobotanical aspects of *Morinda trimera*. The botanical aspect of *Morinda trimera* is a tree-habitus plant, the ethno-pharmacological aspect is used to treat wounds and fever, the ethno-ecological aspect based on its living conditions has partly met the optimal requirements, the ethno-socioanthropological aspect is believed to be a ritual of 'proposing' as a healing process for the sick part, the ethno-economic aspect has not been commercialized but is only used on a limited basis, and the ethno-linguistic aspect is named forest noni because this noni is found in the forest. This documentation of traditional knowledge is expected not only to preserve local wisdom but also to provide a basis for the development of natural resources as local-based herbal medicines that support conservation.

Keywords: Ethnobotany, Forest Noni, Banjar Ethnicity.

Introduction

Indonesia is an archipelago located on the equator. Indonesia has a tropical climate, which supports the region in having around 30,000 of the total 40,000 species of flora in the world. This diversity makes Indonesia one of the global centers of biodiversity (Setiawan, 2022). One of the regions in Indonesia is South Kalimantan. Kalimantan is known as one of the regions with high biodiversity.

The Banjar tribe in Kalimantan also has a diverse local culture. The official website of South Kalimantan Province (2025) states that one of the things that brings pride to the region is the designation of Meratus Geopark as a UNESCO Global Geopark (UGGp). Because of this, conservation has become one of the priorities in

nature preservation and has had a real impact on the culture of the local community.

Many plants in Indonesia, especially among the local Banjar tribe in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency, are used in everyday life. The community believes in the efficacy of these plants as medicine, trusted to relieve pain, cure diseases, and prevent various health problems. Munawaroh & Inggit (2000) stated that knowledge about the use of certain types of plants can develop well in the community so that it remains sustainable. One of the plants used by the Banjar tribe in Bati-Bati District, Tanah Laut Regency, is the forest noni. Based on a survey conducted by a research team among the Banjar tribe in Banyu Irang Village, Bati-Bati District, Tanah Laut

Regency (2024), it was found that the community uses many plants in their daily lives. One of the plants used by the Banjar tribe community in Bati-Bati District, Tanah Laut Regency is the forest noni. The local community passes down its knowledge orally from generation to generation through traditions that are commonly practiced. In the community, it is rare to find medicinal forest plants (THBO) that are specifically cultivated. This is due to the community's unfamiliarity with THBO cultivation practices and the belief that cultivated plants are not as effective as those taken directly from nature (Helmina & Yulianti, 2021). As a result, the local community's knowledge has not been well documented in writing, and there has been no in-depth study on the use of plants from an ethnobotanical perspective.

Previous research related to the ethnobotany of noni was conducted by Forcepta et al. (2021) regarding the benefits of noni fruit in lowering cholesterol levels in dyslipidemia. In another study, Wahyudi et al. (2022) researched the content and effectiveness of noni fruit against hypertension, Suhendriyo et al. (2023) researched the benefits of noni fruit as an antimicrobial, and Landari et al. (2023) researched the drying process to reduce the water content of noni fruit. Another study related to ethnobotany was conducted by Nirwana & Delia Yusfarani (2024), which examined botanical aspects and local community utilization. Murdiyanti et al. (2022) conducted an ethnobotanical study of the Rubiaceae family, one of which was noni, in terms of botany and the use of the fruit to treat ulcers and fever. Haris and Anifah (2019) conducted an ethnobotanical study of Rubiaceae among the people of Tarakan City, one of which was noni, whose fruit is used to treat nausea, increase energy, and care for hair. In previous studies related to the ethnobotany of noni, no findings were found in the aspects of anthropology and other studies. Therefore, the researchers were interested in conducting research on six aspects of the ethnobotany of forest noni among the Banjar tribe in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency. Thus, the purpose of this study was to describe six aspects of the ethnobotany of forest noni among the Banjar

tribe in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency.

Materials And Method

Type of Research

This research uses a qualitative descriptive approach. According to Sugiono (2022), the descriptive qualitative research method is research based on postpositivism philosophy used to study natural objects where the researcher is the key instrument.

Research Method

Data collection was conducted through direct observation, interviews using interview instruments, and documentation. The data collection technique for interviews used snowball sampling. This technique was used to obtain further informants based on the recommendations of previous informants.

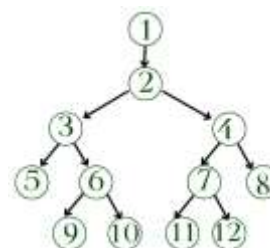


Figure 1. Scheme Technique Snowball Sampling

The collected data was analyzed descriptively and qualitatively to describe the botanical, pharmacological, ecological, socio-anthropological, linguistic, and economic aspects related to forest noni. The data analysis technique used data triangulation to examine and establish validity by analyzing from various perspectives, such as source, technique, and time, to obtain better results. This ethnobotanical study aims to document and preserve the traditional knowledge of local communities, while exploring the ethnobotanical potential of forest noni.

Results And Discussion

Results

Etnobotanical Study

This study shows the results of the ethnobotanical study of forest noni among the Banjar tribe in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency, including botanical studies, ethno-pharmacological studies, ethno-ecological studies, ethno-socioanthropological studies, ethno-economic studies, and ethno-linguistic studies.



Figure 2. Forest Noni (*Morinda* sp.)

1. Botanical Study

Clasification of Forest Noni

Kingdom	: Plantae
Subkingdom	: Tracheobionta
Superdivision	: Spermatophyta
Division	: Magnoliophyta
Class	: Magnoliopsida
Subclass	: Asteridae
Ordoer	: Rubiales
Family	: Rubiaceae
Genus	: <i>Morinda</i>
Species	: <i>Morinda trimera</i> Hillebr.

Source: Plantamor

This study shows the results of the ethnobotanical study of forest noni among the Banjar tribe in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency, including botanical studies, ethno-pharmacological studies, ethno-ecological studies, ethno-socioanthropological studies, ethno-economic studies, and ethno-linguistic studies. Forest noni is a plant belonging to the Rubiaceae family. This plant thrives in tropical and subtropical regions. Its leaves are large, oblong in shape, and fresh green in color. The leaves of this plant are often used in traditional medicine by the Banjar tribe in Banyu Irang

Village, Bati-Bati District, Tanah Regency, due to their various properties.

According to Tjitrosoepomo (2011), Yashaswini, et al. (2014), Murdiyanti et al. (2022), noni is a shrub that can grow to a height of 3 to 6 meters for the *Morinda citrifolia* species and 4 to 16 meters for *Morinda trimera*. The leaves are arranged alternately, have straight tips, and are shiny. Furthermore, Yashaswini also explains that the leaves of the noni tree are fleshy and have a length of between 1.5 and 2 cm. Noni has oval-shaped fruit that is large for *Morinda citrifolia* and smaller for *Morinda trimera*. According to Forcepta et al. (2021), noni has oval or elongated round fruit, measuring 20 to 45 cm in size, with a soft texture and prominent veins. Noni fruit is yellowish-green in color, has a spotted and bumpy surface, with white bumps when young and yellowish-white with black spots when ripe, and emits a distinctive odor. It is a true fruit, because noni fruit is formed from the ovary and not from other parts of the flower. As explained by Tjitrosoepomo (2011), a true fruit is one that occurs solely from the ovary, and if other parts remain attached, those parts are not considered part of the fruit. The fruit also contains many seeds.

However, this noni fruit is not found on the noni plants in Banyu Irang village. This is because the noni plants found there are *Morinda trimera*, known as male noni. In addition, it is the leaves that are used by the community.

2. Ethno-Pharmacological Study

In the community of Banyu Irang Village, Bati-Bati District, Tanah Laut Regency, forest noni is used to treat fever. In addition, the community in Banyu Irang Village also uses forest noni as a treatment for wounds. The part of the plant that is used is the leaves. Other ingredients used in the preparation of the fever medicine are water and salt. So, the ingredients used in the preparation of the fever medicine (fever reducer) are noni leaves, water, and a pinch of salt to reduce the bitter taste of the leaves.

The method of processing wild noni as a fever reducer (antipyretic) is by boiling. Take a sufficient amount of forest mangosteen leaves. Wash the forest mangosteen leaves thoroughly, then take

water and boil the forest mangosteen leaves with water and add a little salt until it boils. After boiling, drain the forest mangosteen leaves. The boiled forest mangosteen leaves produce a potion in the form of a drink to reduce fever. Meanwhile, to use forest noni as a wound remedy, take a sufficient amount of forest noni leaves, pound them, and use them as an ointment on the wound. The community has known about the use of forest noni for generations.

According to Suhendriyo, et al. (2023), noni is used to treat ulcers and reduce fever. The method is to pick ripe fruit, wash it thoroughly, and grate it. The grated fruit is squeezed and filtered. The filtered extract is drunk twice a day after meals. Noni fruit can also be used to treat hypertension. The grated fruit is squeezed and filtered. The filtered extract is collected in a container. A little salt is added to the extract, and then it is drunk.

Wahyudi et al. (2022) also added that the use of noni in the treatment of fever and wounds is also recorded in various literature, which shows the effectiveness of this plant in traditional therapy. According to Djauhariya et al. (2016), the use of noni as a traditional medicine has actually been known for a long time, both in Indonesia and abroad. In traditional medicine noni is used to treat coughs, tonsillitis, thrush, high blood pressure, beriberi, urinary tract infections, kidney inflammation, gallbladder inflammation, intestinal inflammation, constipation, spleen disorders, liver disorders, diabetes, intestinal worms, chickenpox, back pain, stomach ache, colds, and obesity.

The noni plant contains a wide spectrum of nutrients, antioxidants and anti-inflammatory, anti-neoplastic, antiparasitic, sedative and immune-modulating substances. The noni plant has more than 160 phytochemicals, including phenolic compounds, organic acids, and alkaloids. Some researchers have discovered several additional novel compounds (Abnaz, 2018).

3. Ethno-Socioanthropological Study

For the community in Banyu Irang Village, the Banjar tribe in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency, this plant plays an important role in local beliefs, especially in the "melamar" ritual, which involves praying for

healing while rubbing the leaves on the sick body. This ritual is prohibited on Tuesdays or Saturday nights because it is considered to bring negative energy. The method of use is to pick an odd number of noni leaves, such as 5 or 7 leaves, with the condition that it must be an odd number. Then, the noni leaves are placed on a ferapen that has been lit, and the picked leaves are warmed over the ferapen. Use it by reciting prayers and asking for healing. According to Saputra (2018), the ritual use of noni in local traditions, with certain prohibitions, demonstrates how this plant is considered to possess magical or spiritual power in certain communities.

4. Ethno-Linguistic Study

For the people of Banyu Irang Village, the Banjar tribe in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency, the name "forest noni" was given because this plant lives in the forest and is considered to have no fruit. This is because the noni plant found here is *Morinda trimera*. Its scientific name is *Morinda trimera*, describing the relationship between the genus *Morinda* and the Rubiaceae family. According to Iskandar (2019), the name "forest noni" refers to the natural habitat of this plant, and the recognition of the "male" type in local communities is related to their understanding of the differences between existing plant types. According to Yashaswini, the genus name of the noni plant is *Morinda*, which comes from two Latin words: "Morus," meaning mulberry, and "Indicus," meaning India. This indicates the similarity between noni and mulberry (*Morus alba*). The species name describes the similarity of the leaves.

5. Ethno-Ecological Study

Table 1. Environmental Abiotic Factors

No.	Environmental Parameter	Range	Unit
1.	Air temperature	32 – 34,2	°C
2.	Light intensity	749 – 4830	Lux
3.	Wind speed	56,9 – 66,4	m/s
4.	Air humidity	74 – 81	%
5.	Soil moisture	1	%
6.	Soil pH	7	

The following are the results of measurements of abiotic environmental factors: The existence of forest mangosteen is greatly influenced by various environmental parameters that support its growth. This plant grows at air temperatures between 32°C and 34.2°C. In addition, sufficient light intensity, with a maximum of 4,830 Lux, enables efficient photosynthesis, which is important for fruit growth and development. Wind speed also plays a role, where winds with a maximum speed of 66.4 m/s can affect the humidity and temperature around the plant; winds that are too strong can cause physical damage to the plant. High air humidity, ranging from a minimum of 74% to a maximum of 81%, and good soil moisture are very important for noni growth, as this plant prefers moist but not waterlogged soil conditions. Finally, noni can grow well at a soil pH of around 7, indicating tolerance to pH variations as long as other conditions are favorable. All of these measured environmental parameters show how forest noni adapts to its surroundings to ensure its survival and productivity.

According to Djauhariya, et al. (2016), noni is a tropical and wild plant that can grow on the coast up to an altitude of 1500 meters above sea level, both on fertile and marginal land. It is widely distributed, covering the entire South Pacific archipelago, Malaysia, Indonesia, Taiwan, the Philippines, Vietnam, India, Africa, and the West Indies.

6. Ethno-Economic Study

For the community in Banyu Irang Village, the Banjar tribe in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency, no one has commercially utilized noni. This is because noni is not a plant that is specifically cultivated for the community there and it grows wild. Noni is only used for personal needs by the community, but it certainly has great potential to be developed as a raw material for herbal medicine.

The noni plant is believed to originate from Southeast Asia, Tropical Australia and Oceania, stretching from Polynesia to India. The noni plant now grows throughout the tropics and is cultivated on a commercial scale in Latin America, from Mexico to Colombia and Venezuela, as well as in

Costa Rica, Panama, Kenya, Florida and West India. The noni plant grows wild in India, in the coastal regions of Kerala, Karnataka, Tamil Nadu, and Orissa.

Discussion

Forest noni is a plant rich in benefits, thriving in tropical and subtropical regions, and playing an important role in local communities. The existence of forest noni is also linked to local beliefs, such as the "proposal" ritual in Banyu Irang Village, which demonstrates the cultural value attached to this plant. Thus, noni not only serves as a source of traditional medicine but also as part of a cultural heritage that needs to be preserved. The research team would like to thank all the researchers and field assistants involved in this research process, as well as the entire community of Banyu Irang Village, Tanah Laut, for their participation.

Conclusion

Forest noni is a plant rich in benefits, thriving in tropical and subtropical regions, and playing an important role in local communities. The existence of forest noni is also linked to local beliefs, such as the "proposal" ritual in Banyu Irang Village, which demonstrates the cultural value attached to this plant. Thus, noni not only serves as a source of traditional medicine but also as part of a cultural heritage that needs to be preserved. The research team would like to thank all the researchers and field assistants involved in this research process, as well as the entire community of Banyu Irang Village, Tanah Laut, for their participation.

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Conflict Of Interest: The author declares that there is no conflict of interest in the preparation and publication of the article entitled " Ethnobotanical Study of Forest Noni Plants (*Morinda trimera*) In The Banjar Ethnicity in Banyu Irang Village, Bati-Bati District, Tanah Laut Regency."

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