International Journal of Life Science and Agriculture Research

ISSN (Print): 2833-2091, ISSN (Online): 2833-2105

Volume 03 Issue 12 December 2024

DOI: https://doi.org/10.55677/ijlsar/V03I12Y2024-01

Impact Factor: 6.774 , Page No : 933-936

Utilization of *Polygala paniculata* L. Plants as Traditional Medicine by the Community of Borani Langa Village, Ngada Regency

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ABSTRACT: Medical plants are types of plants that have medical benefits for humans and are commonly found in the surrounding environment and in forests. The plant *Polygala paniculata* L., also known as the fragrant root plant, is widely found in the Ngada Regency area. *Polygala paniculata* L. typically grows in yards, gardens, and along roadsides. Considering the strong relationship of the community with cultural traditions and the basic need of the community to use medicinal plants to cure various diseases, the utilization of medicinal plants in the community will continue to increase. This research aims to determine the benefits of the *Polygala paniculata* L. plant as a traditional medicinal plant in the yards and gardens of the Borani Langa Village community in Ngada Regency, as not many people or the community are aware of the benefits or efficacy of this plant. The method used is a qualitative descriptive method. The research was conducted through observation in Borani Langa Village, Ngada Regency. The results of the study indicate that the people of Borani Langa Village, Ngada Regency, are aware of the medicinal properties of the *Polygala paniculata* L. plant as traditional medicine. The part of the *Polygala paniculata* L. plant that is effective in curing certain types of diseases is the root. The *Polygala paniculata* L. plant is processed by boiling it with coconut oil until it reaches a boil, then cooling it down and storing it in a clean bottle. The way to utilize the *Polygala paniculata* L. plant is by massaging the painful area and applying it to the nose. As a traditional medicine, *Polygala paniculata* L. can cure diseases such as flu, pain, and muscle aches.

Published Online: December 03, 2024

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KEYWORDS: *Polygala_paniculata*, Traditional Medicine, Borani, Ngada

INTRODUCTION

Everyone knows about this biodiversity due to environmental changes caused by human activities, industry, settlements, deforestation, expansion of agricultural areas, and so on. Both legally and illegally, harvesting plant and animal species from their natural populations (forests, rivers, lakes, oceans, etc.) has not yet been fully based on their recovery capacity. As a result, the populations of many species of animals and plants have declined. Even some species that were once abundant, such as ramin wood, agarwood, and Bali myna, are now rare (Supriatna dalam Anis dkk., 2015).

The prices of essential goods have skyrocketed due to the economic crisis that has hit this country. One of the possible consequences is that the public can no longer afford synthetic drugs, which are becoming increasingly expensive. Until now, around 90 to 95 percent of the raw materials for ethical drugs (pharmaceuticals) produced by approximately 225 companies in Indonesia are still imported from the original patent-holding manufacturers. As a result, the price of medicine has increased since the year 2000, indicating that health has also become an increasingly expensive luxury (Dhomiri, 2000 dalam Sukara, 2002).

Human civilization has been using plants as medicine for a long time. Plants are a treasure trove of chemicals with various benefits, including as medicine for various diseases. The ability to concoct medicinal plants has been passed down through generations. The raw materials for this traditional medicine are found throughout almost all of Indonesia. Medicinal plants can relieve pain, boost the immune system, kill disease-causing bacteria, and repair damaged organs such as the kidneys, heart, and lungs (Darsini, 2013).

Medicinal plants are a type of plant that have medical benefits for humans and are commonly found in the surrounding environment and in forests. Trimin (in Sulaiman et al., 2017) states that medicinal plants are plants with medicinal properties that have the ability to relieve pain, boost the immune system, kill germs, and repair damaged organs. Until now, the use of traditional

medicine for health maintenance and disease management is still very much needed and developed. This is especially true due to the high costs of medical treatment and medications (Efremile dkk., 2015).

According to the World Health Organization (WHO), herbal medicine is a plant that contains active ingredients that can be consumed in both processed and unprocessed forms. Medicinal plants are usually plants that contain active substances capable of curing certain diseases. (Winarto, 2007). Herbaceous plants are a type of plant that includes grasses, vegetables (such as spinach and katuk), and flowers that are red or white. Its stem is soft because it does not form wood. For years, herbal plants have been used as medicine to treat various diseases (Wiwinda, 2011).

Considering the strong connection of the community with cultural traditions and the basic need of the community to use medicinal plants to cure various diseases, the utilization of medicinal plants in the community will continue to increase. The parts used as medicine are: bark (cortex), wood (lignum), leaves (folium), flowers (flos), roots (radix), tubers (bulbus), rhizomes (rhizoma), fruits (fructus), fruit skins (pericarpium), and seeds (semen).

Now people are starting to consider going back to nature or returning to nature. The community can create a living pharmacy in their yards or gardens by planting medicinal plants for the family, also known as TOGA, which is a group of plants commonly used as ingredients or raw materials for medicine. Thus, the community can grow medicinal plants for the family. (Syahid, 2002). One of Indonesia's treasures renowned for its rich biodiversity is traditional medicine. One of the many medicinal plants is Polygala paniculata L.

The Polygalaceae family has *Polygala* L. as one of its largest genera. As many as 500 species of this plant live in tropical, subtropical, temperate, and mountainous regions around the world, except for New Zealand. Some species of Polygala L. that can be used as medicine are *Polygala chinensis* L., *Polygala paniculata* L., *Polygala polifolia* Presl., and *Polygala sibirica* L. (Valkenburg, 2002).

The plant *Polygala paniculata* L., also known as the fragrant root plant, grows abundantly in the Ngada Regency area. *Polygala paniculata* L. typically thrives in yards, gardens, and along roadsides. This research aims to determine the benefits of the *Polygala paniculata* L. plant as a traditional medicinal plant in the yards and gardens of the Borani Langa Village community in Ngada Regency, as not many people or the community are aware of the benefits or efficacy of this plant.

METHOD

The method used is a qualitative descriptive method. The research was conducted through observations in Borani Langa Village, Ngada Regency. The qualitative data form with the parameters studied includes the benefits of the *Polygala paniculata* L. plant, the parts of the plant that are utilized, and the types of diseases that can be cured. The map of the research location in Borani Langa Village, Ngada Regency, can be seen in Figure 1.

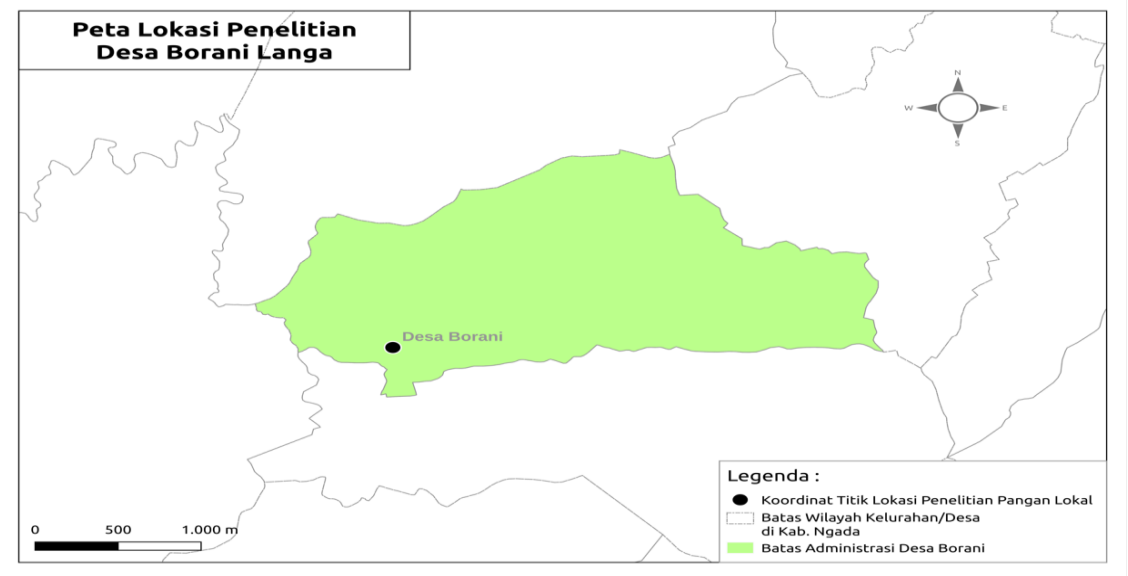

Figure 1. Map of Research Location in Borani Langa Village, Ngada Regency

RESULT AND DISCUSSION

Description of the Research Area

This research has been conducted in Borani Langa Village in Ngada Regency. This study was carried out considering that Borani Langa Village has the potential for the *Polygala paniculata* L. plant and utilizes this plant as traditional medicine.

The Presence of *Polygala paniculata* L. in the Community of Borain Langa Village

P. paniculata L. is a tropical plant that originates from the tropical regions of America, from Mexico to Brazil. Brought to tropical Africa, Indo-Australia, and the Pacific Islands, including Southeast Asia, only in the 17th century. Saponins are found in the roots of many species of Polygala. However, very few studies have been conducted on their bioactive compounds. This plant mostly has medicinal benefits from its roots. Polygala root has a strong, sweet, warm, and soothing aroma.

Some types of polygala, such as *P. sibirica* in China, P. *crotalarioides* Buch.-Ham.ex DC. in the Himalayas, *P. polifolia* in South India and Java, and *P. senega* L. (snake root) in North America, have expectorant properties used in the treatment of cough, asthma, and bronchitis. The decoction of *P. paniculata* is used to treat gonorrhea and back rheumatism. Additionally, the crushed leaves can be used as a wound treatment, but be careful when using them because the water or sap can cause eye irritation (Valkenburg, 2002).

The people of Borani Langa Village utilize the *Polygala paniculata* L. plant that grows wild in their gardens, and some also cultivate it in their yards. The yard can serve two functions: beautifying the house and serving another purpose. Many medicinal plants are available nearby that can be planted and kept in our yard. Herbal plants will not only beautify the house but can also function as a living pharmacy. Furthermore, the Ministry of Health of the Republic of Indonesia is striving to disseminate this TOGA to the entire community. As part of this program, medicinal plants can be cultivated (Muhlisah, 1995).

The Organ *Polygala paniculata* L. Utilized by the Community of Borain Langa Village

Most of the people in Borani Langa Village plant traditional medicinal herbs that can be found in their yards today, including common plants such as ginger, guava, turmeric, lime, lemongrass, kencur, temu lawak, and so on. In general, the people of Ngada Regency are not yet familiar with the plant *Polygala paniculata*, or "aromatic root grass," as a medicinal plant because so far *P. paniculata* has only been considered a weed in gardens and yards.

The people of Borani Langa village partially know how to utilize the *Polygala paniculata* L. plant as one of the plants with medicinal properties for traditional medicine. It is known that the people of Borani Langa village use the roots of the *Polygala paniculata* L. plant as one of the organs that have a distinctive aroma. Leaves, bark, tubers, rhizomes, fruits, roots, and sap are some parts of the plant that are commonly used as herbal medicine. (Limbu dkk., 2024).

P. paniculata L. is an annual plant that reproduces from seeds, flowers, produces seeds, and then dies in the same year. All types of polygala usually self-pollinate, but some are caused by insects. (Valkenburg, 2002).

The Plant *Polygala paniculata* L. as a Traditional Medicine

From interviews with the people of Borani Langa Village, it was found that the use of the plant *Polygala paniculata* L. as a traditional medicine is relatively low because many are still unaware of its benefits. A study conducted by Rijai (2013) shows that vetiver root extract also functions as an antifungal. It fights against Candida utilis and Candida albicans. According to Valkenburg et al. (2001), the roots of the vetiver plant have expectorant properties that can relieve coughs. Methyl salicylate is a secondary metabolite. According to Silalahi et al. (2019), visitors to the Pagerwangi Dome can take this plant and then smell the fragrant scent from its roots, which is similar to balm. Plants that are beneficial as herbal medicine are processed in several ways to treat diseases, namely: boiled, brewed, chewed, squeezed, and eaten directly. The methods of utilizing these medicinal plants include massaging, bathing, applying, sticking, and drinking (Limbu dkk., 2024).

From the observations, it is known that the transmission of this local knowledge to the younger generation is not going well, especially the knowledge of traditional medicinal plants. The Borani Village community uses the roots of the *Polygala paniculata* L. plant as a remedy for flu, pain, and muscle aches. They cook it with coconut oil until it boils, then cool it down, and finally put it into a bottle. If someone experiences flu, pain, or muscle aches, they can use this mixture of roots and coconut oil to apply to the affected area. Scented root (*Polygala paniculata* L.) is a plant with an herbaceous habit. The aroma in the root part is a characteristic feature of the scented root. (Bila, 2022). The extract of akar wangi has the potential to act as an antibacterial against *Staphylococcus aureus* and *Escherichia coli* species and contains secondary metabolite compounds such as flavonoids, saponins, tannins, alkaloids, and triterpenoids/steroids (Nababan et al., 2020).

CONCLUTION

Based on the research results obtained, it can be concluded that the people of Borani Langa Village, Ngada Regency, are aware of the medicinal properties of the *Polygala paniculata* L. plant as traditional medicine. The part of the *Polygala paniculata* L. plant that is effective in curing certain types of diseases is the root. The *Polygala paniculata* L. plant is processed by boiling it with coconut oil until it reaches a boil, then cooling it down and storing it in a clean bottle. The way to utilize the *Polygala paniculata* L. plant is by massaging the painful and sore areas and applying it to the nose. The *Polygala paniculata* L. plant, as a traditional medicine, can cure diseases such as flu, pain, and body aches.

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