

Distribution of Wild Plants Utilized as Traditional Medicine by the Community in Nyungcung Village, West Java

Siti Nurjannah¹, Hafizah Nahlunnisa², Adriani³

¹ Department of Forestry, Faculty of Agriculture, Khairun University, Ternate, Indonesia

² Department of Forestry, Faculty of Agriculture, Jambi University, Jambi, Indonesia

³ Department of Forestry, Faculty of Agriculture, Khairun University, Ternate, Indonesia

*Corresponding Author: sitinurjannah48@gmail.com

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Abstract. *The community of Nyungcung Village utilizes natural resources for their daily needs. The aim of this study is to determine the distribution of wild plants utilized by the people of Nyungcung Village. The research was conducted in Nyungcung Village, Bogor Regency, West Java. The types of data collected include the name of the species, its benefits, and the location where the plants are gathered. Data collection (species names and benefits) was done through interviews, while the location data was obtained by following respondents during the collection of medicinal plants. Respondents were selected using snowball sampling technique. The research results show that a total of 49 species of wild plants are used as medicine. Medicinal plants utilized by the people of Nyungcung Village are obtained from various locations, namely primary forests (3 species), secondary forests (14 species), gardens (27 species), roadside (40 species), home gardens (7 species), and rice fields (6 species). The highest utilization of medicinal plants is found at an altitude of 700–800 meters above sea level (masl). This is because at this altitude, the habitat type is cultivated land in the form of community gardens. The least utilized medicinal plants are found in primary forests (900–1000 masl). The most frequently utilized species of medicinal plants are found on slopes with a gradient of 0–8% (46 species), while the least utilized are found on slopes with a gradient of 25–45% (3 species).*

Keywords : wild plants, distribution, medicinal plants

1. INTRODUCTION

Nyungcung Village, West Java is one of the enclave villages located within the Gunung Halimun Salak National Park based on the Minister of Forestry Decree (SK Menhut) No.175/Kpts-II/2003 concerning the designation of the National Park area. According to Hendarti (2008), the village has a mountainous topography with a slope of 0–45%, an altitude of 600–1 800 m above sea level, with an average rainfall of 3 000 mm/year and a temperature of 22–23°C. The area of Nyungcung Village is 411,533 ha. Nyungcung Village is led by a hamlet head and under him is the RW head. The community's agricultural activities not only plant rice but also a variety of crops such as secondary

crops and vegetables with inheritance management patterns. The form of natural resource management is realized with a mixed garden system (Kebun Talun), which is a combination of annual and seasonal crops such as fruit, wood, and secondary crops. This combination has economic value as well as a protective function for water sources. The main water source in Nyungcung Village is an unprotected spring and is channeled through pipes to all residents' homes. Those who do not have pipe connections collect water through water storage tanks (Hendarti 2008).

The diversity of plants with medicinal properties makes the people of Nyungcung Village an independent community, especially in the health sector. The uniqueness of Nyungcung Village which

has a diverse use of medicinal plants is one of the efforts in realizing the preservation of medicinal plant species. Nyungcung Village is one of the areas that can be used as an example in the management of independent villages in the face of globalization, especially in the field of medicine, because with the use of traditional medicines, the Nyungcung Village community can be more efficient in using money for daily needs. The people of Nyungcung Village are very dependent on the forest to fulfill their daily needs. One of the resource utilization is the utilization of medicinal plants from the forest. Forests in Nyungcung village play a role in providing traditional medicines and materials for traditional rituals (Utomo 2009). Treatment by utilizing medicinal plants is one of the efforts to bring awareness back to nature to achieve optimal health and overcome various diseases naturally.

Wild plants are types of plants that are considered to interfere with staple crops by the community, even so some wild plants have medicinal benefits (Abdullah *et al.* 2010). Research results in other locations show that wild plants also have potential as medicines. There are 38 species of wild plants that have medicinal potential in Silaberanti District, South Sumatra (Kartika 2017), 6 wild plants contain vitami C in Luwu Regency (Mudaffar 2022), and 9 species are utilized by the community in Namorambe District, Aceh (Sembiring & Suwardi 2021). Even so, this research is important considering the large number of wild plant species in Indonesia and their utilization is not yet optimal. The introduction of wild plants in an area by the community can be directly correlated with the potential of these plants in medicine (Tuttolomondo *et al.*, 2014) and the conservation of community knowledge and the discovery of potential drugs in the future (Kodir *et al.*, 2017). *The results of the study present data on various types of wild plants that have been utilized by the community in Nyungcung Village. The purpose of the study was to determine the types of wild plants utilized by the people of Nyungcung Village and to determine the habitat types of these plants.*

2. RESEARCH METHOD

The research was conducted in Nyungcung Village, Malasari Village, Nanggung District, Bogor Regency, West Java. The types of data collected are the name of the species, the benefits, and the location of the collection of plants that are utilized. Data collection (names of species and benefits) used interviews, while the location of data collection by following respondents at the time of taking the medicinal plants. Selection of respondents using snowball sampling technique.

Data Analysis

Types of Wild Plants with Medicinal Properties

The plants found were analyzed descriptively, namely the composition of species, families, and the use of medicinal plants.

Habitat Type of Medicinal Plants

Each type of medicinal plant was calculated based on the location of the respondents taking medicinal plants.

Spatial distribution of medicinal plants based on altitude and slope

Data on the location of the distribution of medicinal plant species that are utilized are analyzed using QGIS software to determine the characteristics of biophysical distribution and accessibility consisting of altitude and slope of medicinal plants that are utilized. The location of medicinal plants found was analyzed at each level of land slope, namely flat (0-8%), sloping (9-15%), rather steep (16-25%), steep (25-45%), very steep (>45%), besides that it was also analyzed based on the level of altitude of the place with 100 m intervals.

3. RESULT AND DISCUSSIONS

Wild Plant Species with Medicinal Properties

The results showed that there were 49 species of wild plants used as medicine. There are 4 families that dominate, namely, Poaceae (8 species), Asteraceae (6 species), Fabaceae (3 species), and Euphorbiaceae (3 species).

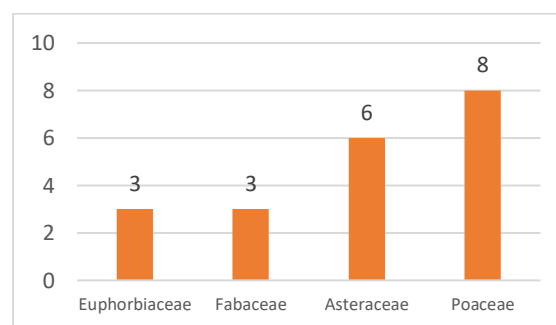


Figure 1. Dominant Family

Based on the 11 respondents interviewed, it is known that the types in the family are the easiest to find and most often used. The Asteraceae family is the second largest family member in the kingdom plantae system (Lawrence, 1958) with about 24,000 - 30,000 species and 1,600 - 1,700 genera (Bisht & Purohit, 2010). This family is known as cosmopolitan, because it has a large concentration of species in various regions such as temperate, cold climate, and subtropics (Medeiros-Neves *et al.*, 2018). Some plant species from the Asteraceae family have bioactive compound components, such as esquiterpenes, lactones, pentacyclic triterpenes, alcohols, alkaloids, tannins, polyphenols, saponins, and sterols that can be used for medicinal purposes (Wegiera *et al.*, 2012).

The use of medicinal plant species is most widely used for pregnancy and childbirth care. One form of pregnancy care is consuming a mixture of various medicinal plant species after childbirth. One of the species used is “ki rapet” (*Drymoglossum piloselloides*) and “sembung” (*Blumea balsamifera*) (Figure 2). “Ki rapet” leaves are used for bleeding medicine (hemostatic), pain relief (analgesic), and blood cleansing (Usman *et al.* 2012). “Sembung” can be used to treat bone pain after childbirth to improve blood circulation and remove blood clots (Hariana 2006). Research conducted by Dahlianti *et al.* (2005) also revealed that sembung leaves are used by postpartum women, Sukajadi Village, Tamansari District, Bogor.

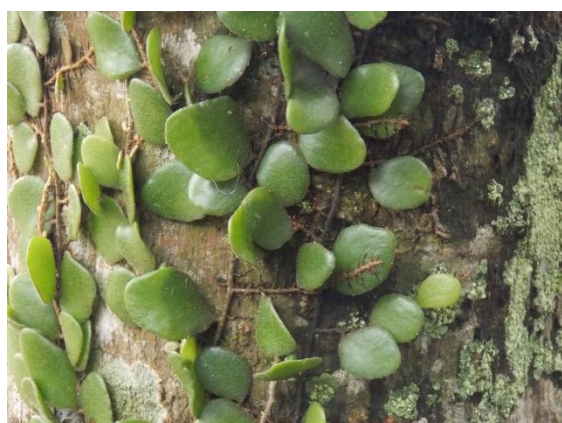


Figure 2. *Drymoglossum piloselloides*

Medicinal plant species for muscle and joint pain in Nyungcung Village is the second largest list of medicinal plants used by the community to treat body aches, gout, and back pain. In accordance with the statement of Salsabila (2014), that muscle and joint pain in Palutungan Hamlet, Cisantanan Village, Mount Ciremai National Park is complained by many people who work as farmers, this also happens in Nyungcung Village where most of the people are farmers. One type of plant that is often used is “reundeu” (*Staurogyne elongata*). Some respondents said that “reundeu” as a urine decongestant, so that after consuming these medicinal plants the body condition is healthy again. Hariana (2006) states that plants of the Stauroginaceae family are used as diuretics or urine passers.

Habitat Type of Medicinal Plants

Medicinal plants utilized by the community in Nyungcung Village are obtained from various locations, namely primary forests, gardens, roadsides, secondary forests, yards, and rice fields.

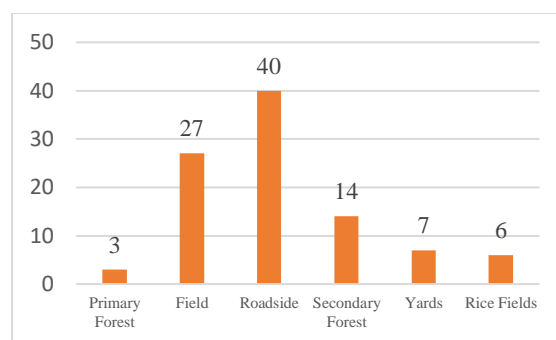


Figure 3. Distribution of medicinal plants based on habitat type

There were 40 species of medicinal plants found on the roadside and the most compared to other locations. People utilize plants from the roadside because they are the most accessible, close to home and the number is quite large.

Spatial distribution of medicinal plants by altitude and slope

Medicinal plants utilized by the community are located at different altitudes (Figure 4). The overlay results show that Nyungcung Village has an altitude of 466-1,033 meters above sea level. Cultivated land, settlements, and rice fields are at an altitude of 500-800 masl, secondary forest 800-900 masl, and primary forest 900-1,000 masl. Sitepu (2006) says that Nyungcung Village has an altitude of 700-1,700 meters above sea level.

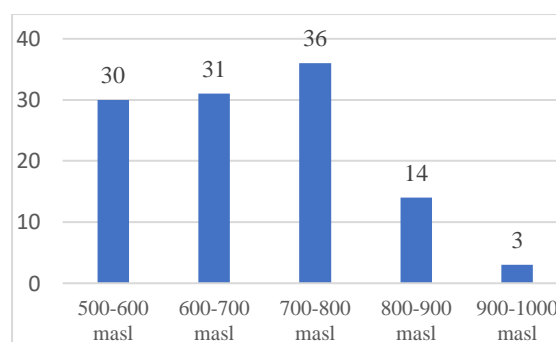


Figure 4. distribution of medicinal plants based on altitude

The highest utilization of medicinal plants at an altitude of 700-800 masl. This is because at that altitude the habitat type is cultivated land in the form of community gardens, as well as at an altitude of 600-700 masl, the number of medicinal plants utilized is also high because at that altitude is residential land, while the least medicinal plants are utilized in primary forests (900-1.000 masl).

The distribution of medicinal plants utilized by the people of Nyungcung Village varies according to the level of land slope. Medicinal plants are found on slopes of 0-8%, 8-15%, 15-25%, and 25-45% (Figure 5). The most species of medicinal plants

utilized were found on 0-8% slope, namely 46 species and the least on 25-45% slope with 4 species.

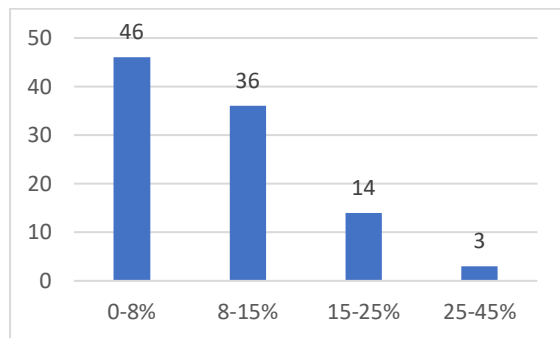


Figure 5. distribution of medicinal plants based on slope

At the level of flat slope (0-8%) the percentage of utilization is the highest because it is easier to reach by the community, while for medicinal plant species that are at the level of steep slope (25-45%) are few because of the difficult terrain and far from the location of community settlements. Rajati et al. (2006) revealed that in the slope class (0-15) % and (15-30) % vegetation grows well. In addition, the fertility of various types of plants on slopes of 0-15% is also influenced by erosion factors. The community does not utilize land with a slope of >45% which is an area that must be protected.

4. CONCLUSION

The Nyungcung village community utilizes 49 types of wild plants into medicine found from various habitat types, namely rice fields, roadsides, fields, yards, secondary forests, and primary forests. The distribution of medicinal plants at an altitude of 500-1000 meters above sea level with a slope level of 0 to 45%.

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REFERENCE

Bisht, V.K & Purohit, V. "Medicine and Aromatic Plants Diversity of Asteraceae in Uttarakhand". Herbal Research & Development Institute. Gopeshwar. Uttarakhand, India. Nature and Science, 2010

Dahlanti R, Nasoetion A, Roosita K. 2005. Keragaan perawatan kesehatan masa nifas, pola konsumsi jamu tradisional dan pengaruhnya pada ibu nifas di Desa Sukajadi, Kecamatan Tamansari, Bogor. *Media Gizi dan Keluarga*. 29(2):55-65.

Hariana A. 2006. Tumbuhan Obat dan Khasiatnya Seri 3. Bogor (ID) : Penebar Swadaya

Kartika, T. 2017. Potensi Tumbuhan Liar Berkhasiat Obat di Sekitar Pekarangan Kelurahan Silaberanti Kecamatan Silaberanti. *Sainmatika* : 89-99

Kodir, R.A., Moelyono, M.W., Iskandar, Y. "Etnofarmasi Dan Ulasan Bioprospektif Tumbuhan Obat Liar Dalam Pengobatan Tradisional Kampung Adat Cikondang, Kecamatan Pangalengan, Kabupaten Bandung, Jawa Barat", *Farmaka* 15(1): 26-44, 2017

Lawrence. 1958. Taxonomi of Vascular Plants. Edisi Ke-3. New York: The Macmillan Company.

Medeiros-Neves, B., Teixeira, H. F., Von Poser, G. L. (2018). The Genus *Pterocaulon* (Asteraceae) – a Review on Traditional Medicinal Uses, Chemical Constituents and Biological Properties. *J. Ethnopharmacol.* 224, 451–464.

Mudaffar, R.A. 2022. Identifikasi Morfologi dan Ekologi pada Tumbuhan Liar yang Berpotensi Sebagai Sumber Vitamin C. *Perbal: Jurnal Pertanian Berkelanjutan*. Volume 10 No.1 : 100-111.

Rajati T, Kusmana C, Darusman D, Saefuddin A. 2006. Optimalisasi pemanfaatan lahan kehutanan dalam rangka peningkatan kualitas lingkungan dan kesejahteraan ekonomi sosial masyarakat desa sekitar hutan studi kasus di Kabupaten Sumedang. *Jurnal Manajemen Hutan Tropika*. 12(1):38-50.

Salsabila PP. 2014. Pemanfaatan tumbuhan pangan dan obat oleh masyarakat di Dusun Palutungan Desa Cisantanen sekitar Taman Nasional Gunung Ciremai [skripsi]. Bogor (ID): Institut Pertanian Bogor.

Sembiring M, Safrianti, Suwardi A.B. 2021. Pengetahuan masyarakat terhadap keanekaragaman tumbuhan liar berkhasiat obat dan potensi pemanfaatannya di Kecamatan Namorambe. *Pros. SemNas. Peningkatan Mutu Pendidikan* Volume 2 Nomor 1, Januari 2021 Halaman 14-18.

Swadaya Hendarti L. 2008. Menepis Kabut Halimun: Rangkaian Bunga Rampai Pengelolaan Sumberdaya Alam di Halimun. Bogor (ID) : Yayasan Obor Indonesia, The Ford Foundation dan RMI.

Tuttolomondo, T., Licata, M., Leto, C., Bonsangue, G., Gargano, M.L., Venturella, G., Bella, S.L. 2014. Popular uses of wild plant species for medicinal purposes in the Nebrodi Regional Park (North -Eastern Sicily, Italy). *Journal of Ethnopharmacology* 157 (2014) 21 –37

Usman, F.H., Yusro, F., Tavita, G.E., Sisillia, L., Sirait, S.M. 2012. Identifikasi jenis-jenis tumbuhan obat di Jalan Parit H.Husin 2 Kecamatan Pontianak Tenggara. *Biodiversitas*. 3(5):96-98.

- Utomo B. 2009. *Penyadaran Gender, Kesehatan dan Lingkungan. Studi Kasus di Kampung Nyungdung dan Kampung Babakan Ciomas Kawasan Halimun. Jakarta (ID) : Pusat Penelitian Kesehatan Universitas Indonesia UI.*
- Wegiera, M., Helena, D.S., Marcin, J.D., Magdalena, K., Kamila, K. *Cytotoxic Effect of Some Medicinal Plants From Asteraceae Family. Chair and Departement Of Pharmaceutical Botany. Medical University. Vol.69. No.2, 2012*