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Exploration of the Potential of Weeds as Medicinal Plants in Local Medicine Traditions

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Abstract

Herbal medicines come from wild plants as a safe and relatively easy-to-obtain alternative family medicine. Based on ethnobotanical analysis, several weed species have the potential as raw materials for traditional medicines that are used by the community as alternative medicines. The results of interviews with several residents in South Bolaang Mongondow Regency, the community often uses leaves, roots, stems, flowers, and seeds of weeds as raw materials for medicines and are said to be effective in curing certain diseases. South Bolaang Mongondow Regency, North Sulawesi Province, Indonesia consists of four tribes, namely the Bolango, Gorontalo, Bolaang Mongondow, and Sangihe tribes, and still use weeds as traditional medicine ingredients. South Bolaang Mongondow Regency, North Sulawesi Province has a wealth of traditional medicinal plants that are processed into herbal medicines. The purpose of the study was to obtain data on the types of weeds that have the potential as medicinal plants used by the community in South Bolaang Mongondow Regency including Molibagu, Kombot, and Popodu Villages. The methods used in this study were field observation, interviews with informants, and communities that use weeds as traditional medicinal plants. Data were taken from 3 (three) villages and each village consisted of 5 (five) communities that use weeds as medicinal plants. The results of the interview showed that there were several residents in South Bolaang Mongondow Regency, who often used leaves, roots, stems, flowers, and seeds of weeds as raw materials for medicine and were said to be able to cure certain diseases. 15 types of weeds have the potential as medicinal plants and can be utilized by the community in South Bolaang Mongondow Regency. Village healers and the community in South Bolaang Mongondow Regency still use weeds as a mixture of traditional medicine.

Keywords: *Diseases; Traditional Medicine; Weeds*

Introduction

Wild plants are also called weeds because they often directly or indirectly harm farmers because they compete with cultivated plants, thus reducing agricultural production. Usually, areas far from health centers such as hospitals and health centers, use many traditional herbal remedies as alternative treatments

inherited from their ancestors (Zuhud & Hidayat, 2009). LIPI (1978) stated that medicinal plants are all types of plants that are known and believed to have medicinal properties due to the secondary metabolite content found in these medicinal plants. Indonesia as a country with the second largest mega biodiversity currently provides extraordinary benefits. Among the many plants that exist, there are also quite a few plants that can be used as medicines because of the secondary metabolite compounds contained in various organs, one of which is in the leaves. Several secondary metabolite compounds have medicinal properties, such as flavonoids, saponins, alkaloids, steroids, triterpenoids, and tannins (Khafid et al., 2023).

South Bolaang Mongondow Regency, North Sulawesi Province, Indonesia consists of four tribes, namely the Bolango, Gorontalo, Bolaang Mongondow, and Sangihe tribes. Village healers (village shamans) in South Bolaang Mongondow Regency use wild plants (weeds) to treat their patients are still closely related to their original tribe and the knowledge obtained from generation to generation. The selection of raw materials for traditional medicines varies, including utilizing plant parts from wild plants (weeds). Based on ethnobotanical analysis, several weed species have the potential for raw materials for medicinal plants and are used by the community as alternative medicines or traditional medicines.

10 types of weeds have the potential as medicinal plants, *Paedria foetida* Linn., *Centella asiatica* L., *Bidens pilosa* L., *Ageratum conyzoides* L., *Peperomia pellucida*, *Phyllanthus niruri* L., *Imperata cylindrica* L. Beauv, *Hyptis capitata* Jecq., *Acalypha indica*, and *Eclipta alba* L. because they contain secondary metabolites so they have the potential to be used as medicinal plants for the community (Rahmawati et al., 2022). Furthermore, it was stated that each weed contains secondary metabolite compounds such as alkaloids, saponins, phytates, flavonoids, steroids, triterpenoid tannins, and alkaloids, which have the potential to be used as medicinal plants for the community, to cure diseases such as fever, digestive problems, headaches, herpes and open wounds. The parts of the weeds that are used as raw materials for traditional medicine are the roots, stems, leaves, fruits, seeds, flowers, skin, sap and the most commonly used medicine are the leaves. According to Yowa et al., (2019) reported that leaves are the part of the plant that is widely used for medicinal plants.

Method

The research was conducted in South Bolaang Mongondow Regency, North Sulawesi Province, Indonesia for 6 months from May to September 2024. Survey and field observation methods were used to obtain the required data. Interviews with village healers as informants and communities using wild plants (weeds) as raw materials for medicinal plants as traditional medicine. Data or samples taken included Molibagu Village, Kombot, Popodu Village. The materials and tools used were bags for storing weed samples, paper, glue, markers, office stationery, and other materials and tools. Data analysis was carried out descriptively to provide an in-depth picture of the use of wild plants (weeds) as raw materials for traditional medicine. Data obtained through survey and field observation methods were analyzed to identify types of wild plants (weeds), uses of traditional medicine, and locations of availability.

Results and Discussion

Plants are said to be medicines if they have medicinal properties and are trusted and used by the community. These plants can be used by simply mixing them for community medicine because they can be obtained easily and become an alternative medicine if you have difficulty obtaining modern medicines. Weeds (wild plants) whose existence is not desired by farmers because of the negative impacts, namely disrupting plant growth and reducing plant production through competition with cultivated plants, including in terms of the use of growing space, nutrients, light, and water. In addition to having a negative impact, the presence of weeds has a positive influence, including erosion-preventing plants, organic fertilizer materials, and weeds have been proven to be used as traditional medicine.

As a raw material for traditional medicine, because each weed contains secondary metabolite compounds such as alkaloids, saponins, phytates, flavonoids, steroids, triterpenoid tannins, and alkaloids, which have the potential to be used as medicinal plants for the community, to cure diseases such as fever, digestive problems, headaches, herpes, and open wounds (Rahmawati et al., 2022).

Some weeds commonly used by healers such as dukung anak weed (*Phyllanthus niruri* has the local name *Meniran* or *Dukung anak*). Meniran is a plant originating from tropical areas that grows wild in forests, fields, gardens, and yards, and is not cultivated because it is considered an unwanted weed or grass. Meniran has single flowers, found in the leaf axils facing downwards hanging. Research results show that the substances contained in the *Meniran* plant are Filantina, hypophyllantina, and calcium salts. Meniran is used by village healers in South Bolaang Mongondow Regency as a medicine for *Bantahang* (postpartum headaches) which is taken with honey. According to Ervina & Mulyono, (2019), *Meniran* weeds contain one of the flavonoid compounds, namely quercetin, which can fight free radicals, inflammation, and aging.

Table 1.Weeds Used by Village Healers in South Bolaang Mongondow Regency, North Sulawesi Province, Indonesia

Local name of Weeds	Scientific Name	Benefits as a Medicinal Plant or for Treating
Rumput Macan	*Lantana camara*	Gastric acid, bloody stools, vomiting blood
Rumput Tai Sapi	*Ageratum conyzoides*	Gastric acid, bloody stools, vomiting blood
Dukung Anak	*Phyllanthus niruri L.*	Back or intestinal pain
Rumput Sosapu	*Sida rhombifolia* L.	Various diseases
Sesewanua	*Clerodendron squamatum*	Infection, sprain
Kaki Kuda	*Centilla asiatica*	*Cough*
Sirih	*Piper betle* L.	Itching
Daun Selada (Sirih Cina)	*Peperomia pellucida*	Cholesterol
Benalu	*Loranthus sp.*	*Cancer*
Tungkara	*Impatiens balsamina*	Wound
Benalu	*Loranthus* sp.	*Cancer*
Kumis Kucing	*Orthosiphon aristatus*	Diabetes
Cocor Bebek	*Kalanchoe pinnata*	Wounds, allergies
Alang-Alang	*Imperata cylindrica*	Bleeding or urinary stones
Keji Beling	*Strobilanthes crispus*	Difficulty urinating, kidney pain

Source: Research results 2024

Discussion

Several types of potential weeds as traditional medicine ingredients and used by village healers in South Bolaang Mongondow Regency are presented in Table 1. Village healers mix medicinal plant ingredients according to their respective methods. Generally, the process of processing medicinal plants includes boiling, squeezing, pounding, and applying. Processing is usually done by mixing several parts of several types of medicinal plants. The most common process is by boiling. The parts of the plant that are widely used as herbal medicine are leaves, followed by stems, bark, roots, flowers, fruits, and seeds.

Ageratum conyzoides (cow dung grass), is mixed with *Lantana camara* (tiger grass) as a medicine for vomiting blood, bloody stools, and stomach acid. Ageratum contains alkaloids, saponine tannins, coumarins, essential oils, and flavonoids which may play a role in curing several diseases. The results of a study conducted by Ningsi et al., (2015) showed that Tembelekan (*Ageratum conyzoides*) can be used as a medicine to help heal wounds because it contains flavonoids, saponins, tannins, and essential

oils in its leaves. The results of a study by Nurdin et al., (2021), the active compounds contained in the ethanol extract of Tembelekan leaves (*Lantana camara* Linn) which were tested using the phytochemical screening method showed the presence of flavonoids, saponins, and tannins which are antibacterial.

Other weeds used by village healers (Table 1) are believed to be able to cure patients' diseases. Noer (2016) stated that people's interest in natural ingredients is due to the belief that consuming natural medicines (including herbs) is relatively safer than synthetic drugs. According to Ergina et al., (2014), plants have secondary metabolite compounds consisting of specific small molecules and have varying structures with different functions and roles in each type. Compounds that are efficacious as medicines include flavonoids, alkaloids, triterpenoids, tannins, saponins, and steroids.

Conclusion

15 types of weeds have the potential to be medicinal plants and are used by the community in South Bolaang Mongondow Regency. Village healers and the community still use weed as a mixture of traditional medicinal ingredients. The importance of preserving local biodiversity and the development of locally based herbal products that can support the community's economy. Encouraging research to identify the active compounds and clinical effectiveness of the weed. Weed utilization needs to be supported by conservation and education efforts so that its sustainability is maintained.

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