ETHNOBOTANY MEDICINAL PLANTS OF DAWAN ETHNIC IN NORTH CENTRAL TIMOR REGENCY**ETNOBOTANI TUMBUHAN OBAT SUKU DAWAN KABUPATEN TIMOR TENGAH UTARA**Noviana Mery Obenu^{1)*}, Emilia Juliyanti Bria²⁾

Received : June, 14 2021

Accepted : October, 4 2021

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ABSTRACT

The use of medicinal plants is still maintained for generations by the Dawan Tribe in North Central Timor Regency. The loss of knowledge about the use of plants as an alternative treatment of various diseases used by local communities can be caused by the impact of modernization. Therefore, it is necessary to carry out the process of documenting this knowledge. The purpose of this research is to take an inventory of medicinal plants, to know the plant organs used for medicine and how to use the medicine. The method used in this study is a qualitative description method, with several field data collection techniques and identification of medicinal plant species. Data collection techniques include observation, interviews, and exploration. The results of this study indicate that there are 44 species of medicinal plants used, from 25 plant families. The medicinal plant family with a high number of species is the Zingiberaceae family (13.6%). Based on the habitus, 44 species of medicinal plants used consisted of 23 species from trees, 2 species from lianas, 9 species from herbs, 7 species from shrubs, and 3 species from shrubs. In addition, based on plant organs the most widely used as medicine out of 44 plant species, namely the part of the leaf organ (23.91%). Meanwhile, based on the method of use of the 44 species of plants used for medicinal ingredients, the method of drinking has the highest percentage (33.33%) and is usually practiced by the Dawan Tribe.

Keywords: Dawan ethnic, ethnobotany, medicinal plant

ABSTRAK

Pemanfaatan tumbuhan obat masih terus dipertahankan secara turun menurun oleh Suku Dawan di Kabupaten Timor Tengah Utara. Hilangnya pengetahuan tentang pemanfaatan tumbuhan sebagai salah satu alternatif pengobatan berbagai penyakit yang digunakan oleh masyarakat lokal dapat disebabkan oleh dampak modernisasi. Oleh karena itu, proses dokumentasi pengetahuan perlu dilakukan. Tujuan penelitian ini yakni menginventarisasi tumbuhan obat, mengetahui organ tumbuhan yang digunakan untuk obat dan cara penggunaan obat. Metode yang digunakan dalam penelitian adalah metode kualitatif, dengan beberapa teknik pengumpulan data lapangan dan identifikasi spesies tumbuhan obat. Teknik pengumpulan data meliputi observasi, wawancara dan eksplorasi. Hasil penelitian ini, menunjukkan bahwa terdapat 44 spesies tumbuhan obat yang digunakan, dari 25 famili tumbuhan. Famili tumbuhan obat dengan jumlah spesies yang tinggi yaitu Famili Zingiberaceae (13,6 %). Berdasarkan habitusnya, 44 spesies tumbuhan obat yang digunakan terdiri dari 23 spesies dari pohon, 2 spesies dari liana, 9 spesies dari herba, 7 spesies dari perdu dan 3 spesies dari semak. Selain itu, berdasarkan organ tumbuhan yang paling banyak digunakan sebagai obat dari 44 spesies tumbuhan yakni bagian organ daun (23,91%). Sementara itu, berdasarkan cara penggunaannya dari 44 spesies tumbuhan yang digunakan untuk bahan obat, cara diminum memiliki persentase yang paling tinggi (33,33 %) dan biasa dilakukam oleh masyarakat Suku Dawan.

Kata Kunci : Suku Dawan, etnobotani, tumbuhan obat

How to cite: Obenu NM, EJ Bria. 2021. Ethnobotany medicinal plants of Dawan ethnic in North Central Timor Regency. *Journal of Tropical Biology* 9 (3): 246-252.**INTRODUCTION**

Medicinal plants are plants that can be used as drugs or medicinal ingredients in treating various diseases, both intentionally planted and growing wild [1]. This group of plants contains certain chemical substances found in root organs, stems consisting of bark and wood, leaves, flowers, and

seeds of plants. The important role of this plant is to treat disease, heal, and improve the body's biological activity, for example, as an antioxidant [2].

Since ancient times people have used many plants as traditional medicine. However, as times change and the influence of modernization can cause changes to the social order of society. This

greatly affects the local knowledge of the community about the use of medicinal plants and their management from one generation to the next. The more local people's knowledge about medicinal plants is lost, the sustainability of these plants is also threatened, it is even possible that their extinction may occur [3]. Indonesia is rich in ethnic, religious, and cultural diversity. The number of tribes in Indonesia is estimated at 1,300, and each of them used to use plants as traditional medicine with their unique ingredients and presentation methods. This is local wisdom that has been passed down from generation to generation [4]. Research on knowledge and use of medicinal plants by local communities has been widely carried out in Indonesia. For example, Riswan and Andayaningsih [5] revealed as many as 25 species of plants used by the Sasak community of West Lombok as traditional medicine. Furthermore, Setyowati [6] conducted ethnopharmacology research on traditional medicinal plants in the Dayak community of East Kalimantan and succeeded in recording 47 species of medicinal plants consisting of 27 families and 46 genera. Yuniati dan Alwi [7] in their research, documented as many as 70 species of medicinal plants found in 66 genera and 48 families in the forest ecosystem of Pakuli Village, Central Sulawesi. Furthermore, Meliki et al. [8] revealed 65 species of plants used as traditional medicine by the Iban Dayak Tribe, Sintang Regency. In addition, Gunadi [1] succeeded in making an inventory of 51 species of medicinal plants from 36 families used by local Dayak communities in Gerantung Village, Monterado District, Bengkayang Regency. Qasrin et al. [2] revealed 102 species from 53 families of medicinal plants used by the Malay community in Lingga Regency, Riau Islands. These studies show that the utilization of medicinal plants in each region has a system of utilizing medicinal plants that is unique and different from other regions. This can be seen from (1) the source of the location where medicinal plants are obtained, (2) the status of plant cultivation, (3) the part used as medicine, and 4) the method of utilization of medicinal plants.

North Central Timor (TTU) is one of the regencies in East Nusa Tenggara Province, which is also rich in various tribes and cultures. One of the known tribes is the Dawan Tribe (Atoin Meto). The Dawan tribal community in their daily life also still uses traditional medicines from plants. However, this local knowledge has not been well documented. Therefore, this study aims to take an inventory of medicinal plants to find out the plant organs used for medicine and how to use drugs by the local Dawan Tribe.

METHODS

This research was conducted from May to August 2020 using a qualitative description method and plant species identification. In addition, several techniques were used to collect field data, namely observation, in-depth interviews, and exploration.

The research steps include:

a. Plant exploration and observation

Exploration of medicinal plants was carried out by exploring with key informants to find out the presence of medicinal plants. This research was initiated by making observations of the field/research location to determine the condition of the research location and determine the sample. The four research locations are Usapinonot Village, West Insana District, Oenenu Village, Central Bikomi District, Tasinifu Village, Mutis District, Supun Village, South Biboki District.

b. Deep interview

In-depth interviews were conducted with purposively selected informants who were considered competent by taking into account the diversity in four sub-districts in North Central Timor Regency. The informants were selected purposively, namely the people who use traditional medicine as an alternative treatment, which can treat various diseases and also help the delivery process. Informants selected in this study were village *shamans* (traditional healers), traditional leaders, and community users of plant species as ingredients for traditional medicine.

c. Plants identification

The plant identification process is carried out directly in the field. The morphological description is done by noting important parts of plant morphology such as stature, roots, leaves, stems, and flowers. In addition, the identification process also includes their habitat and photo documentation. The identification of plant species is used through literature searches [9, 10, 11].

RESULTS AND DISCUSSION

This study recorded 44 species of medicinal plants from 25 plant families (Table 1). All species of medicinal plants had been used by the local community as traditional medicine. The medicinal plants found were dominated by plants that lived wild in the forest. However, there were also several species of these plants cultivated by the community as ornamental plants in the yard of the house. Some plants were only known by local names and could not be identified because some plant parts that

support the identification process did not exist, such as leaves, flowers, fruits. In addition, even these plants only grow in the rainy season, for example, *po naj* plants (marked with red letters). In addition, some of the same species were rewritten because they were used for different types of diseases.

Medicinal plant species. Interviews of research results with respondents, in this case, *shamans* or traditional medicine makers/processors, it was known that there were plant families with a number of species widely used for treatment. Zingiberaceae was one of the families with the largest percentage of species use, namely 13.6% with the number of species 6. Then it was followed by Poaceae 11.4%, Fabaceae 9.1%,

Myrtaceae 6.8%. The percentage of each family that had been identified was illustrated by a graph as shown below (Figure 1). The results of this study were in line with what had been conducted by Fauzi [12], namely medicinal plants that were dominantly used by the people of East Nusa Tenggara (NTT) were plants that come from the Zingiberaceae family. This was because plant species from this family could grow in the house's yard, and some species were also used as cooking spices. In addition, it was known that plants of the Zingiberaceae group contain secondary metabolite compounds (antioxidants) that could inhibit the growth of pathogens that were detrimental to human life [13].

Figure 1. Percentage of plant families and number of species

Figure 2. Percentage of plant parts used

Based on the habitus category, the 44 species of medicinal plants consisted of 23 species of plants in the tree category, two species of lianas, nine species of herbs, seven species of shrubs, and three species of shrubs. Organs from tree-like plants were widely used as medicinal ingredients. The results of the identification of the use of plant parts showed that the highest percentage was the leaves (23.91%), followed by rhizomes (17.39%), and shoots (17.39%), then roots, fruits, all parts of the plant, stems bark and fruit skin. The percentage of use of plant organs looked like in Figure 2.

Leaves were the most widely used plant organs as a traditional medicine because the leaves were generally soft in texture, had a high water content (70-80%), and were places for photosynthesis to accumulate. The content of organic compounds was found in leaf organs such as essential oils, phenols, potassium compounds, and chlorophyll [14]. Another reason for using leaves was the ease of managing them. The use of leaves also did not damage plant organs. This was because the leaves were easy to grow back and could be used continuously until the plant was old and died.

How to mix and use medicinal plants. Based on the method of use, from 44 species of plants that were used as alternative treatments for various diseases, it was found that there were eight species the treatment method was brewed, smeared, drunk, taped, and drunk, sprinkled, used for bathing and sprayed. The use by drinking had the highest percentage, which was 33.33% (Figure 3). The method of boiling or brewing with hot water was more widely used by the community because it was believed to be able to release more chemical compounds than other methods. In addition, this process also aimed to remove substances contained in plants that were better than burning because the higher the temperature, the greater the solubility of a substance [2].

Economic limitations caused traditional medicine to be the people's first choice to treat a

disease. Usually, this traditional medicine was not only used for first aid, and the use of traditional medicine was easy to obtain or could be directly found on the banks of rivers, in the fields, in the forest, and in the yard of the house, which did not need to spend much money when compared to modern medicines, it was often also a problem. The last alternative was if the modern treatment did not work.

Interviews with informants showed that knowledge about traditional medicine, using plant species, was generally obtained from ancestors who inherited to posterity, and some were found through dreams during sleep. Some plant species that were taken have their ritual of taking that has been carried out for generations. All plants that are taken to be used as an alternative treatment are taken by the *shaman* or his healer either in the forest or in the yard of the house. In addition, in treating a disease, several plants were combined with other plants. Several ingredients were also used during treatment, namely lime.

CONCLUSION

The Dawan Tribe community in North Central Timor (TTU) Regency used as many as 44 species of medicinal plants from 25 plant families, with the most dominant species being Zingiberaceae (13.6%). In addition, the most dominant habitus ere trees with leaf organs that were widely used (23.91%) as ingredients for medicinal herbs, and how to drink them had the highest percentage (33.33%) in their use.

ACKNOWLEDGMENT

The author would like to thank the Research and Service Institute (LPPM) of the University of Timor (Unimor) for funding this research through research grants for novice lecturers in 2020.

Figure 3. Percentage of use medicinal plants

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Table 1. Species of medicinal plants, plant families, disease species, plant organs used and methods of using medicinal plants by the Dawan Tribe, North Central Timor Regency

No	Medicinal plants		Scientific Name	Family	Type of disease	Plant organs used	How to use
	Local Name	Indonesia Name					
1	Nijel molo	Temulawak	<i>Curcuma zanthorrhiza</i> Roxb	Zingiberaceae	Ulcer, Stomach, Flu/Cold, Vaginal discharge, Hepatitis, Chronic Hepatitis, Fatigue, Tiredness, Difficulty sleeping, Lack of Appetite, Launching Postpartum Menstruation	Rhizome	Brewed
2	Nijel	Jahe	<i>Zingiber officinale</i> Rosc	Zingiberaceae		Rhizome	
4	Huki	Kunyit	<i>Curcuma longa</i> L.	Zingiberaceae		Rhizome	
5	Nijel muti	Kencur	<i>Kaempferia galanga</i> L.	Zingiberaceae		Rhizome	
6		Temu ireng	<i>Curcuma aeruginosa</i> Roxb	Zingiberaceae		Rhizome	
7	Puni	Genoak/ Jeringau	<i>Acorus calamus</i> L	Acoraceae		Rhizome	
8	-	Cengkeh	<i>Syzygium aromaticum</i> L.	Myrtaceae		Fruits	
9	-	Kayu manis	<i>Cinnamomum verum</i> J. Presl	Lauraceae		Bark	
10	At' kaseh	Sirsak	<i>Annona muricata</i> L.	Annonaceae	Breast Cancer, Streamlining Blood Circulation, Cholesterol, Uric Acid, stamina enhancer	Fruits Leaves	Brewed
11	Ek Tani Fuij	Mengkudu	<i>Morinda citrifolia</i> L.	Rubiaceae	High blood pressure, Heart, Cholesterol, Malaria, Hepatitis, Rheumatism, Gout	Rhizoma	Brewed
12	Sare mtasa	Serai merah	<i>Cymbopogon nardus</i> L.	Poaceae	Relieve stomach pain, flatulence, nausea, runny nose, fatigue, itching due to mosquito bites	Leaves and Bark	Smeared and drink
13	Kisne	Kumis Kucing hutan	<i>Lantana camara</i> L.	Verbenaceae	Urinary stones, Stomach ache, Kidneys, Cough and Menstruation	Whole Plant Parts	Drink
14	Kujawas	Jambu hutan	<i>Psidium guajava</i> L.	Myrtales		Leaves	
15	Paok mtasa	Damar merah	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae		Bark	
16	Hun	Alang-alang	<i>Imperata cylindrica</i> (L.) Raeusch	Poaceae		Roots	
17	Kabuka/kom	-	<i>Ziziphus mauritiana</i> L.	Rhamnaceae	Breast and Kidney Cancer	Leaves	Stick and Drink
18	Tato'o	Biduri	<i>Calotropis gigantea</i> (L) Dryand	Apocynaceae		Roots	
19	-	Pohon kupu-kupu	<i>Bauhinia purpurea</i> L.	Fabaceae		Roots	
20	Usapi	Kusambi	<i>Schleichera oleasa</i> M.	Sapindaceae	Sarampa	Shoots	Bathe
21	Kane	Gala-gala	<i>Sesbania grandiflora</i> (L) Pers.	Fabaceae			
22	Hoek	Pohon putih	<i>Eucaliptus alba</i> Reinw ex. Blume	Myrtaceae			
23	Kiub	Pohon asam	<i>Tamarindus indica</i> L.	Fabaceae			
24	Cermelek	Cermelek	<i>Phyllanthus acidus</i> L.	Phyllanthaceae			

No	Medicinal plants		Scientific Name	Family	Type of disease	Plant organs used	How to use
	Local Name	Indonesia Name					
25	Daun ende	Daun ende	<i>Centella asiatica</i> (L.) Urban	Apiaceae	Liver	Leaves	Bathe
26	Papo kase		<i>Senna alata</i> (L.) Roxb	Fabaceae		Whole Plants Parts	
27	-	Benalu kuning	<i>Cuscuta reflexa</i> L.	Concovulaceae			
28	Leol kase	Jeruk manis	<i>Citrus</i> sp.	Sapindales	Apparent death	Rind	Splatter
29	Upun	Mangga lokal	<i>Mangifera indica</i> L.	Anacardiaceae		Shoots	
30	Jak	Nangka	<i>Artocarpus heterophyllus</i> Lam.	Moraceae		Shoots	
31	Ob	Bambu	<i>Bambusa</i> sp.	Poaceae		Shoots	
32	Papau tuna		<i>Diplazium esculentum</i> (Retz) Sw.	Athyriaceae	Epilepsy	Whole Plants Parts	Splatter
33	Jak	Nangka	<i>Artocarpus heterophyllus</i> Lam.	Moraceae		Shoots	
34	Upun	Mangga	<i>Mangifera indica</i> L.	Anacardiaceae		Shoots	
35	Usapi	Kusambi	<i>Schleichera oleasa</i> (Lour.) Oken	Sapindaceae	Bleeding in Men	Shoots	Drink
36	Po naj		-	-		Roots	
37	Aijao	Cemara	<i>Casuarina</i> sp.	Casuarinaceae	Headache with Back Pain	Fruits	Spurt
38	Taen Tune	Gewang	<i>Corypha utan</i> Lam.	Arecaceae		Leaves	
39	Huki	Kunyit	<i>Curcuma longa</i> L.	Zingiberaceae	Postpartum Treatment	Rhizoma	Drink
40	Kiub	Asam	<i>Tamarindus indica</i> L.	Fabaceae		Leaves	
41	Neke	Kapok	<i>Ceiba pentandra</i> (L.) Gaertn.	Malvaceae	Headache	Leaves	Adhere
42	Uki	Pisang kapok	<i>Musa paradisiaca</i> L.	Musaceae		Leaves	
43	Kujawas	Jambu	<i>Psidium guajava</i> L.	Myrtaceae	Stomach ache	Shoots	Drink
44	Hun	Alang-alang	<i>Imperata cylindrica</i> (L.) Raeusch	Poaceae	Chest pain spreading to the head and back area	Roots	Splatter
45	Manus	Sirih hijau	<i>Piper bettle</i> L.	Piperaceae		Bark/Leaves	
46	Puah	Pinang	<i>Areca catechu</i> L.	Arecaceae		Fruts	
47	At Fuij	Anonak hutan	<i>Annona reticulata</i> L.	Annonaceae	Postpartum	Bark	Adhere
48	Okam	Mentimun	<i>Cucumis sativus</i> L.	Cucurbitaceae		Roots	
49	Hun	Alang-alang	<i>Imperata cylindrica</i> (L.) Raeusch	Poaceae		Roots	