

Ethnomedicine Studies of Traditional Medicinal Plants of the Muna Tribe in the Village of Bungi Southeast Sulawesi Province of Indonesia

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Abstract: *Ethnomedicine studies have been carried out on traditional medicinal plants of the Muna tribe in Bungi Village, Kontunaga District. Ethnomedicine studies have an important role in the discovery and development of chemical compounds potentially as drugs derived from natural ingredients. This study aims to describe the use of traditional medicinal plants of the Muna tribe in Bungi Village which includes efficacy, usage dosage, parts used and processing methods. This research is an observational descriptive research with data collection techniques, namely observation and interviews with 3 traditional healer people. The results showed that there were 39 types of plants efficacious as traditional medicines which were divided into 24 families that had been utilized by the Bungi Village. These plants can be obtained in the garden and the forest. Leaves are part of the plant that is most widely used in medicine as much as 51%. How to process plants as medicinal ingredients are boiled, soaked, kneaded, chewed, pasted, pounded, crushed, shredded and dripped. Boiling is the most widely used method. There are several types of medicinal plants that have not been widely known by the community which have the potential to be developed as raw materials for traditional medicines.*

Keywords: Ethnomedicine, medicinal plants, muna tribe, Indonesia

1. Introduction

The tendency of people to consume traditional medicines caused by lifestyle issues back to the nature and high prices of modern medicines has made the demand for medicinal plants increase. This is supported by the presence of global data showing the use of traditional medicines in Asia such as the People's Republic of China (PRC) reaching 90% and Japan 60-70% [1][2]

Traditional medicinal plants are ingredients of natural ingredients that have traditionally been used for treatment based on experience. The diversity of medicinal plants can support the availability of traditional medicines that are ready to use. Each region has its own wisdom in utilizing various medicinal plants that have been inherited from generation to generation based on the intuitive knowledge of the community obtained from an understanding of the concept of the relationship of the universe including humans with God [3]. This legacy is a great potential if it is developed in the future.

To explore information about the use of traditional medicinal plants in certain communities is through ethnomedical studies. Ethnomedicine studies are used to understand the culture of health from the perspective of society, especially the alternative medicine system using medicinal plants that have become a tradition of the people. In Southeast Sulawesi with its tribal diversity and its own wisdom in utilizing various medicinal plants, it is a great potential to be explored so that it can be used for the development of herbal medicines. One of them is the Muna tribe community. Muna community is a society that still holds tightly cultural values including traditional medicine.

One type of Muna traditional medicine is Lansau. Lansau is an extract of traditional medicine which is believed by muna ethnic groups since time immemorial which consists of 44

types of traditional plants taken based on the religious and philosophical values of the Muna community [4]. One area that still holds the culture of traditional Muna tribe still uses a medicinal herb, namely in Bungi Village, Kontunaga District, Muna Regency. This study aims to describe the use of traditional medicinal plants of the Muna tribe in Bungi Village which includes the types of medicinal plants, efficacy, dosage of use, parts used, and methods of processing plants as medicinal ingredients. This research is expected to provide an overview of the use of medicinal plants by the Muna people in Bungi Village so that they can be developed in the future and become the basis for further research in the development of drugs derived from natural ingredients.

2. Method of Study

This research was conducted from February to June 2019. The research took place in the village of Bungi, Kontunaga Subdistrict, Muna Regency, Southeast Sulawesi. The sampling technique used a purposive sampling method in which the study sample consisted of 3 traditional healer people who performed traditional Muna tribes in Bungi Village. The presentation of data is done descriptively by concocting information that has been obtained from interviews, observation, documentation, and results of plant identification.

Data Collection Techniques

1) Interview

Data collection was obtained through semi-structured interviews using open-ended question types on 3 informants including plant properties, usage dose, parts used, processing methods and philosophical values contained in the use of medicinal plants

2) Observation

Plants that are used to treat certain diseases are recorded local names, scientific names, uses / types of diseases

treated, parts used, methods of use, dosage of use, time to take plants, sources of plant acquisition, and philosophical meanings of traditional medicine.

3) Documentation

After all the data collected is proven by the existence of plants, then documented with a camera.

4) Plant identification

Plant species that have not been known for scientific names are taken for example for identification purposes

3. Result and Discussion

The results showed that 39 species of plants were used as medicinal ingredients by the Muna tribal traditional healer in

Bungi village. The types of medicinal plants utilized by the Muna people in Bungi Village are presented in Table 1. There are four types of medicinal plants which have no clear classification and scientific names so that plant determinations are needed to ensure the classification and scientific name of the medicinal plants. The medicinal plant is divided into 24 families. Distribution of family classification of plants as medicinal ingredients by the people of Bungi Village can be seen in Figure 1. The most useful plants are from the family Euphorbiaceae.

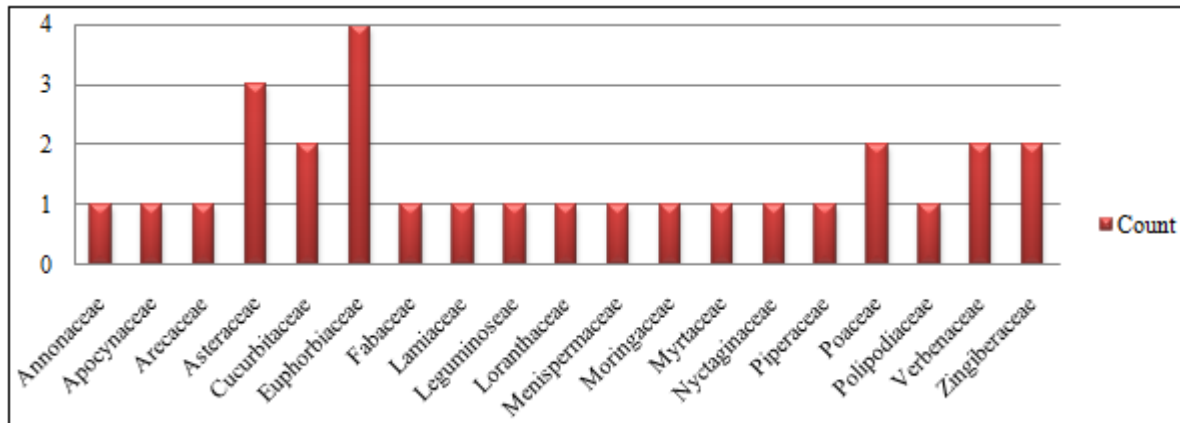


Figure 1: Medicinal plants based on family

Traditional healer in Bungi village uses medicinal plants using traditional methods. There are 9 methods of processing in the use of medicinal plants by the people of the Muna tribe in Bungi Village, which are pounded, boiled, kneaded,

crushed, chewed, grated, dropped, and pasted. Processing by boiling is the most widely used method. According to Simbala and Rafta boiling processing is also the most widely used method in several other regions [5][6].

Table 1: Types of Medicinal Plants Used by the Muna Tribe in Bungi Village Southeast Province of Indonesia

| No. | Name of Plant | | Family | Plant Used | Medicinal Uses |
|-----|------------------------------|--|----------------|----------------|----------------------------|
| | Local Name | Scientific Name | | | |
| 1 | Bandotan/Kaobooba | <i>Ageratum conyzoides</i> Linn. | Asteraceae | Leaves | Itching and Ringworm |
| 2 | Benalu/Susuru | <i>Loranthus sp.</i> Jacq. | Loranthaceae | Stem, leaves | Asthma |
| 3 | Brotowali/Radhawali | <i>Tinospora crispa</i> (L.) Hook. F & T | Menispermaceae | Stem | Malaria |
| 4 | Bunga iodium/bunga ampisilin | <i>Jatropha multifida</i> Linn. | Euphorbiaceae | Latex | Open wound |
| 5 | Bunga kenikir/Cakar ayam | <i>Cosmos Caudatus</i> Kunth. | Asteraceae | Leaves | Uric Acid |
| 6 | Bunga pukul 4/Kambea mpatani | <i>Mirabilis jalapa</i> | Nyctaginaceae | Leaves, Flower | Inflamed boils |
| 7 | Daun papasan/Popasa | <i>Coccinia grandis</i> | Cucurbitaceae | Leaves | Fever |
| 8 | Bunga turi/Kamba dhawa | <i>Sesbania grandiflora</i> (L.) Pers. | Fabaceae | Leaves | Fever, deep heat |
| 9 | Jambu biji/Bumalaka | <i>Psidium guajava</i> L. | Myrtaceae | Leaves | Diarrhea |
| 10 | Jarak pagar/Ntanga-ntanga | <i>Jatropha curcas</i> Linn. | Euphorbiaceae | Leaves | Fever, acne |
| 11 | Kayu gabus/Tongkoea | <i>Alstonia scholaris</i> | Apocynaceae | Stem bark | Jaundice |
| 12 | Kelor/Banggai | <i>Moringa oleifera</i> L. | Moringaceae | Leaves | Thypus, open wound |
| 13 | Ketepeng cina/Sau bandara | <i>Casia alata</i> L. | Leguminosae | Leaves | Tinea versicolor |
| 14 | Kunyit putih/Kuni kapute | <i>Curcuma amada</i> Roxb. | Zingiberaceae | Rhizome | Thypus |
| 15 | Labu kuning/olabu | <i>Cucurbita moschata</i> Durh | Cucurbitaceae | Seed | Skin disease |
| 16 | Meniran/Kaghai-ghai | <i>Phyllantus niruri</i> L. | Euphorbiaceae | Stem, Leaves | Cholesterol |
| 17 | Paku simbar layang/Katimboka | <i>Drynaria spasisora</i> Moore. | Polypodiaceae | Stem | Deep heat |
| 18 | Patah tulang/Pata tulang | <i>Euphorbia tirucalli</i> L. | Euphorbiaceae | Stem | Bone fracture |
| 19 | Pinang/Obea | <i>Areca catechu</i> L. | Arecaceae | Seed | Diabetes, |
| 20 | Pohon jati/Kidawa | <i>Tectona Grandis</i> | Verbenaceae | Stem Bark | Diarrhea |
| 21 | Rumput belulang/Lakoora | <i>Eleusine indica</i> (L) Gaertn. | Poaceae | Leaves | Hair dressing |
| 22 | Selasih/Tulasi kaburu | <i>Ocimum basilicum</i> | Lamiaceae | Leaves | Intestinal worms |
| 23 | Sembung/Kaambu-embu | <i>Blumea balsamifera</i> L. | Asteraceae | Leaves | Malaria |
| 24 | Serei/Padamalala | <i>Cymbopogon nardus</i> (L.) Randle | Poaceae | Stem, Leaves | Broken bones, veins |
| 25 | Sirih hutan/Gili | <i>Piper cillibracteum</i> | Piperaceae | Leaves | Diabetes, ocular disorders |
| 26 | Srikaya/Sirikaea | <i>Annona muricata</i> L. | Annonaceae | Fructus | Hypertension |

| | | | | | |
|----|-----------------------|----------------------------------|---------------|---------|---------------------------------------|
| 27 | Tembelekan/Patiwala | <i>Lantana camara</i> L. | Verbenaceae | Leaves | Vomiting blood |
| 28 | Temu lawak/Tumbu lawa | <i>Curcuma xantorrhiza</i> Roxb. | Zingiberaceae | Rhizome | Blood purifier and womb corroboration |

The use of plants as medicinal ingredients is divided into two: single use and combination with other plants. Leaves are the most widely used plant organ (51%) as traditional medicine because the leaves are generally soft textured because they have a high water content of 70-80%. In addition, the leaves are a place for accumulation of photosynthesis which is thought to contain elements (organic substances) that have the nature of curing disease [6]. The percentage of the use of plant parts as medicinal ingredients by the Muna people in Bungi Village is presented in Figure 2.

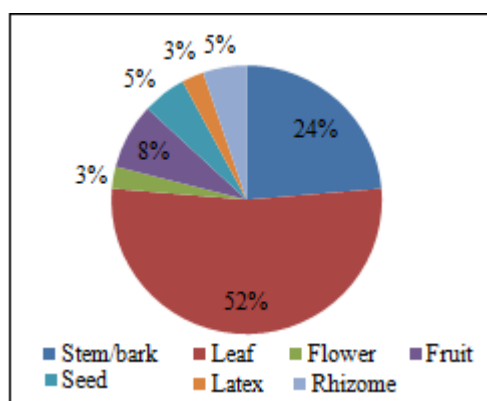


Figure 2. Percentage of Plant Parts Used

The efficacy and effectiveness of medicinal plants are influenced by secondary metabolites in it. The efficacy of medicinal plants because of the content of secondary metabolites with various molecular structures and the level of biological activity that can reduce and treat various diseases [7]. Plants that are utilized singly by the Muna tribe traditional healer in Bungi Village are 26 types of medicinal plants that can treat as many as 28 types of diseases. There are 5 types of medicinal plants that have more than one treatment effect. The medicinal plants include jungle betel, areca nut, cereals, moringa, and turi flowers. The description of the efficacy and method of utilizing medicinal plant species used empirically by the Muna tribal traditional healer in Bungi Village are described as follows:

1) *Ageratum conyzoides* Linn

These plants have a height of 10-120 cm, stem erect or lying, single leaf and pinnate with a jagged round shape and pointed tip, and have bell-shaped flower crowns and are purple or white [8]. This plant is used by local people to treat skin diseases such as itching due to infection. Its use is by taking 1 handful of young leaves of the plant, kneading and then applying it to the skin.

2) *Loranthus sp.* Jacq

This plant is used by local people as a treatment for asthma (shortness of breath). Plant parts that are used are stems and leaves in the form of simplicia. The way to concoct the plant is by mixing the stems and leaves of the dried plants then boiling them and drinking them twice a day.

3) *Tinospora crispa* (L.) Hook. F & T

Traditional healer Muna tribe in Bungi Village uses the Brotowali plant as a malaria medicine. They use it by taking a 2-inch brotowali stem, chopping and boiling it. Cooking water is taken 2 times a day. Secondary metabolites contained in brotowali stems are alkaloids, starch, picoretosid glycosides, picoretin, berberine, palmatin, kolumbin, saponin, tannins, polyphenols, glycosides, and flavonoids [9]. The secondary metabolite that acts as an antimalarial is its tinocrisposide content.

4) *Jatropha multifida* Linn.

Traditional healer in Muna tribe in Bungi Village traditionally uses *Jatropha multifida* Linn as an open wound medicine. Its use is by picking the leaves of the plant, the sap that comes out of the leaves is dropped on the part of the body that has an open wound. Secondary metabolites that are thought to play a role in wound healing are saponins and tannins. The mechanism of action of saponin in wound healing is stimulating collagen formation and increasing tissue epithelialization [10][11].

5) *Cosmos Caudatus* Kunth

Traditional healer Muna tribe in Bungi Village traditionally uses Kenikir plants to treat gout. Traditional use is by taking 1 handful of young leaves of kenikir flower, boiled with 3 cups of water to leave 1 glass. Drink 2 times a day for 3 days.

6) *Mirabilis jalapa*

Traditionally this plant is used to treat inflamed ulcers. The parts used are leaves and flowers. Traditionally the method of concocting the plant is by taking a handful of leaves and flowers mpuran then pounded then applied to the edges of inflamed boils. Four o'clock flowers are traditionally believed to be a boil drug allegedly due to the anti-inflammatory and antibacterial effects contained therein.

7) *Coccinia grandis*

Traditionally traditional healer in Bungi Village uses papasan leaves as a fever-lowering (antipyretic). The traditional use is by taking 2 leaves of papasan, separated from the bones of the leaves, 1½ sheets of the separated leaves were kneaded in 1 cup of water. The water from the leaves is filtered and then drunk. This herb is used twice a day until the fever drops. The chemical content that is thought to act as an antipyretic is an alkaloid and saponin compound.

8) *Sesbania grandiflora* (L.) Pers.

Traditional use for overcoming heat is by taking a handful of Turi flowers. The leaves are then kneaded with 1 glass of water. The results of squeezing the leaves of turi flower are taken twice a day. To deal with a fever, 1 handful of turi flowers is squeezed in a glass of water, then brushed on body heat points such as the head and armpits.

9) *Psidium guajava* L.

Traditional healer Muna tribe in Bungi Village traditionally uses Guava as an anti-diarrhea. Traditional use is by taking 3 guava leaves by biting and then chewing. Sari leaf water is then swallowed. Guava leaves can cure symptoms of abdominal pain due to the activity of secondary metabolites inside. Guava leaves contain secondary metabolites of tannins, polyphenols, flavonoids (quercetin), monoterpenoids, sesquiterpenes, alkaloids, saponins and essential oils [12]. Secondary metabolites in guava leaves which act as antidiarrheals are flavonoids, especially quercetin which can inhibit the release of acetylcholine and intestinal contractions [13].

10) *Jatropha curcas* Linn.

Traditionally Muna tribe traditional healer in Bungi Village uses *Jatropha* leaves as a fever (antipyretic). The traditional use is by taking 2 pieces of distance leaves, then separated from the bones of the leaves, 1½ sheets from the separated leaves were kneaded in 1 cup of water. This herb is used twice a day until the fever decreases. In addition to being used singly traditional healer also utilizes this plant by combining it as an acne remedy by mixing it with other medicinal plants such as ginger and puzzles. The trick is to take 3 pieces of *Jatropha* leaves, 1 segment of ginger rhizome, and 7 seeds of grass puzzles. All ingredients are then ground until smooth and used as powder.

11) *Alstonia scholaris*

Cork wood is a tree with a height of 5 to 10 meters, has a round and straight stem. Single leaves with sitting leafy leaves, strands of ovoid leaves, 8-14 cm long. It has been reported that cork wood has various bioactivity such as antioxidants, anticancer, antibacterial, anti-inflammatory and analgesic. This plant contains secondary metabolites including flavonoids, phenolics, steroids, alkaloids, terpenoids and tannins [14][15].

Traditionally the traditional healer in Bungi Village uses this plant as a cure for jaundice by using cork bark mixed with frangipani flower skin, bark of guava, and betel nut fruit. The dosage used is taken 2 slices of each plant stem skin and 3 betel nut seeds. All ingredients are then boiled until the water changes color. The results of decoction are taken in the morning and evening as much as 1 cup.

12) *Moringa oleifera* L.

Traditional healer Muna tribe in Bungi Village uses this plant as a medicine for typhus and wound cover. As a typhoid treatment, the use of this plant is by taking 5 stems of moringa, separated from the stem and then boiled. Decoction of *Moringa* leaves is then smoothed and mixed together with food consumed by a person who suffers from typhoid 3 times a day for 7 days.

13) *Casia alata* L.

Traditionally, traditional healer in Bungi Village utilizes Chinese Ketepeng as a cure for phlegm. The traditional use is by taking 5 pieces of Chinese ketepeng leaves, the leaves are squeezed and then applied to the body parts that are puffy. Panu is one of the diseases caused by fungi that attack the skin. Secondary metabolites that are thought to play a role in preventing fungal growth, namely Flavonoids.

According to Triana et al [16][17] the content of Flavonoids is effective for several groups of fungi.

14) *Curcuma amada* Roxb.

The Muna tribe in Bungi Village traditionally uses white turmeric as a typhoid drug by taking 3 turmeric rhizomes, cleaning them, then shredding them. The water is squeezed and then drunk. Based on the beliefs of traditional medicine of the local community, if it is the first time using this herb, then consumption is done twice a day, for the second time use can be increased to 3 times a day.

15) *Cucurbita moschata* Durch

Traditional healer Muna tribe in Bungi Village traditionally utilizes pumpkin as a treatment for calumera disease, a type of disease characterized by redness like boils. The part of the plant that is used is the seeds. How to use it is taken 7 pumpkin seeds, then chewed and pasted on the affected body part. Pumpkin seeds contain alkaloid compounds, saponins, steroids, triterpenoids, cucurbitacin, lecithin, resin, stearin, phytoosterol compounds, fatty acids, squalen, β-tocopherol, tyrosol, vanillic acid, vanillin, luteolin and acid sinapat [18]. Compounds that are thought to play a role in the treatment of kalumera are alkaloids which act as antibacterial.

16) *Phyllanthus niruri* L.

Traditionally the Muna tribe traditional healer in Bungi Village uses this plant to prevent cholesterol. How to concoct the medicine is by taking 1 handful of meniran herb, cleaned then boiled. Cooking water is taken 2 times a day. In addition to single use, these plants are combined with other plants such as broken shard leaves, cat whiskers, and avocados as a medicine for swelling of the prostate gland. The method of concocting the medicinal plants is taken each 7 pieces of avocado leaves and broken shard leaves and 1 handful of cat mustache leaves and meniran. All ingredients of the medicine are boiled. The cooking water is taken 3 times a day.

17) *Drynaria quercifolia* J. Sm.

Traditional healer Muna tribe in Bungi Village uses this plant as a medicinal heat because it has the ability to reduce heat. Traditionally, this plant is used by taking 1 inch of plant stems, cleaning and scraping the inside of the plant stems, then adding enough water and boiling until boiling. The results of the decoction are taken as much as 1 cup every morning and evening.

18) *Euphorbia tirucalli* L.

Traditional healer Muna tribe in Bungi Village traditionally uses Plant fractures (*Euphorbia tirucalli* L.) for the treatment of fractures. The part used is plant seeds. How to use is taken from 1 to 3 stems of plants, then pounded until smooth and then distributed to the broken bone. One of the chemical constituents of this plant is euphol which, by various studies, has been shown to have anti-inflammatory properties [19].

19) *Areca catecu*

Traditional healer Muna tribe in Bungi Village traditionally utilizes betel nut as a diabetes drug and rapet drug. As a diabetes traditional healer drug using betel nuts by taking 7 young fruit seeds, each seed is split into 7 parts then boiled until the water changes color. The cooking water is taken

twice a day. Use as a rapet drug, areca fruit is used by taking 10 young fruit seeds, each seed is split into 7 parts then boiled until the water boils and changes color. The water is then used every day to be evaporated and used to enter the female area.

20) *Tectona Grandis*

Traditional healer Muna tribe in Bungi Village traditionally uses teak skin as a medicine for stomach pain. The traditional use is by taking (slicing) 2 pieces of teak size 15 cm, cleaned the layer of cork and boiled with 3 cups of water. This teak skin cooking water is taken 1 time a day. Teak cortex (bark) is thought to contain chemical compounds that are efficacious as antibacterial. However, there are no specific studies regarding the effectiveness of teak skin as antidiarrheal.

21) *Eleusine indica (L) Gaertn.*

Grass grass is a plant with fiber roots. Stem height between 10-90 cm, flat stem. The leaves grow in two strands, the length of the leaves 3-5 cm wide, 0.1-1 cm the leaves of the leaves stick to strong, long strands of leaves like a line, with the edges of the leaves rough at the ends. The Muna community in Bungi Village traditionally uses this plant as a hair fertilizer by taking 2 handfuls of plant leaves, adding enough water, then squeezing in the water. The water from the leaves of the plant is used for shampooing.

22) *Ocimum basilicum*

Basil has different names in each region in Indonesia and also in several other countries. Basil is also called tulsi, tulasi, holy basil, sacred basil, shrubby basil, and sweet basil. Traditional healer Muna tribe in Bungi Village traditionally uses selasih leaves as a worm medicine. The traditional use is by taking 1 handful of basil leaves, cleaning, then squeezing with 1 glass of water. The juice from the juice is taken twice a week. The antihelminthic effect of basil leaves is thought to be due to the active content of tannins and saponins. The active compound saponin inhibits the work of cholinesterase, so the worm will experience muscle spastic paralysis which can eventually cause death.

23) *Blumea balsamifera L.*

Based on the research that has been done, traditionally the Muna tribe traditional healer in Bungi Village often utilizes sembung leaves to treat malaria by taking 2 handfuls of sembung leaves, boiling with 3 cups of water. Cooking water is taken twice a day. The pharmacological effects given by the sembung leaves are related to the activity of secondary metabolites contained therein. The compounds that act as antimalarials are myristine, alcohol, sesquiterpenes, dimethyl ether chloracetophenone, pyrocatechin, glycosides and saponins. One of the triterpenoid compounds, namely ursolic acid derivatives reported to have inhibitory activity of heme polymerization by forming a complex with a heme carboxylic ring so that the heme will remain a dimer ring [20][21].

24) *Cymbopogon nardus (L.) Randle*

Traditional healer Muna tribe in Bungi village, traditionally using this plant to heal broken bones and tendons. Its use is by way of several stems of plants taken and crushed, the

stems are then affixed or tied to the broken bone. The chemical content contained in *Cymbopogon citratus* is phenolic acid, alkaloids, alcohol and more importantly, flavonoids and tannins, which are thought to be responsible for several therapeutic activities such as anti-inflammatory activities through their ability to inhibit the synthesis of inflammatory mediators. According to Chen et al, flavonoids have a work target that is much related to its ability as an anti-inflammatory and analgesic [22][23].

25) *Piper cillibracteum*

Traditional healer Muna tribe in Bungi Village uses this plant as an eyewash medicine because it has the ability to clear the eyes, by taking 7 to 10 pieces of jungle betel leaves and then soaking them in enough water. The soaking water is used to wash the eyes by blinking the eyes in the soaking water. Aside from being an eyewash medicine, Traditional healer also uses this plant as a cure for diabetic wounds, by taking one handful of betel leaf forest, adding enough water and boiling it until boiling. The cooking water is then used to wash wounds in diabetic patients.

26) *Annona muricata L.*

The community uses soursop fruit as antihypertensive by taking 1 young fruit plant, cleaned from the skin and boiled until tender. The fruit is then eaten and the cooking water can be drunk. The effect of srikaya fruit content on blood pressure is related to the role of potassium in maintaining electrolyte stability in the body. The mechanism of potassium in reducing first blood pressure, potassium can reduce blood pressure by vasodilation, causing a decrease in total peripheral retention and increasing cardiac output.

27) *Lantana camara L.*

This plant by the Muna tribe traditional healer in Bungi Village is used as an internal medicine such as vomiting blood. How to use it is taken 1 handful of young leaves of the plant, given enough water and boiled until boiling and the results of the stew drink 1 cup every morning and evening. Based on the research of Shah et al the content of secondary metabolites of Tembelekan leaves include tannins, saponins, glycosides and reduced sugars. There have been no studies showing metabolites that play a role in treating internal disease (vomiting of blood) and the effectiveness of using tembelekan leaves, so further research is needed to ensure that chemical compounds have the potential to cure internal diseases (vomiting of blood) [24].

28) *Curcuma xantorrhiza Roxb*

Traditionally, the Muna people in Bungi Village use this plant as a postpartum drug. The part of the plant used is the rhizome. People use this plant by mixing it with tamarind. Traditionally the method of concocting this medicine is 2 ginger rhizome segments cleaned and then grated to squeeze the water. Then add tamarind water to ½ cup. This concoction is taken twice a day for 3 days, continued once a day to 7 days. Traditionally the herb is believed to be able to cleanse the blood after labor, strengthen the womb and facilitate the release of breast milk. Screening results show several secondary metabolites in ginger rhizomes, namely phenol, terpenoids, flavonoids, and quinones [25].

Based on the efficacy data and literature studies, the content of secondary metabolites from 39 types of medicinal plants used in traditional medicine by the Muna tribe traditional healer in Bungi village there are several types of medicinal plants that are not widely known by the community that have the potential to be developed as raw materials for traditional medicines. The growth includes ampicillin as a treatment for open wounds, plant fractures as a treatment for fractures, leaf papasan as a fever-lowering, betel forest which is used as a treatment for diabetic wounds and eye purifiers and basil as a treatment for worms.

4. Conclusion

There are 39 types of medicinal plants that are utilized by the Muna tribe traditional healer in Bungi Village, Kontunaga District. Plant organs used in treatment are roots, stems, leaves, flowers, fruits, seeds, rhizomes, tubers, and sap. The most useful part is as much as 51% leaves. In the traditional medicine of the Muna tribe traditional healer in Bungi Village, in addition to the single use of medicinal plants it is also commonly mixed (combined) with other plants. There are 26 types of herbs that are used singly to treat 28 types of diseases and 5 types of combination herbs to treat 4 types of diseases.

References

- [1] L. N. O. C. Bernice, "Traditional chinese medicine in health care in Macao.," *Cuid. la salud la Med. china Tradic. en Macao.*, 2017.
- [2] S. Sudarmono, "Etnomedisin masyarakat Warsamin, Kepulauan Raja Ampat, Papua Barat," *Proceeding Biol. Educ.*, 2018.
- [3] S. Ihsan, Sunandar, Henny Kasmawati, "Studi Etnomedisin Obat Tradisional Lansau Khas Suku Muna Provinsi Sulawesi Tenggara," *Pharmauho*, 2016.
- [4] S. Ruslin*, Henny Kasmawati, Sunandar Ihsan, A. Nur Samsiar, R. Zulfikar Tahir, and E. A. Darmawan, "The identification of pharmacognostic on the Extraction of traditional medicine to lansau of muna ethnic of Southeast Sulawesi Province," *Indo Am. J. Pharm. Sci.*, vol. 4, no. 11, pp. 4170–7, 2017.
- [5] A. S. KATILI, "Inventarisasi tumbuhan obat dan kearifan lokal masyarakat Etnis Bune dalam memanfaatkan tumbuhan obat di Pinogu, Kabupaten Bonebolango, Provinsi Gorontalo," 2015.
- [6] "INVENTARISASI DAN KARAKTERISASI TANAMAN KAYUMANIS SEILON (Cinnamomum zeylanicum Blume) DI KEBUN PERCOBAAN LAING SOLOK," *Bul. Penelit. Tanam. Rempah dan Obat*, 2015.
- [7] M. J. Balunas and A. D. Kinghorn, "Drug discovery from medicinal plants," in *Life Sciences*, 2005.
- [8] A. Fitriani, F. Ihsan, and Y. Hamdiyati, "Antibacteria Activity of Shewanella and Pseudomonas as Endophytic Bacteria from the Root of Ageratum conyzoides L.," *Asian J. Appl. Sci.*, 2015.
- [9] "QUALITY STANDARDIZATION OF BROTOWALI (Tinospora crispa) STEM EXTRACT," *Maj. Obat Tradis.*, 2016.
- [10] "Jatropha multifida Linn.," in *SpringerReference*, 2011.
- E. C. Mina, "Chemical and Anti-tubercular Screening on the Leaves of Jatropha multifida Linn.," *Pure Appl. Biol.*, 2013.
- [11] K. L. Chadha and R. M. Pandey, "Psidium guajava," in *CRC Handbook of Flowering*, 2018.
- [12] F. Wang, Y. Chen, Y. Zhang, G. Deng, Z. Zou, and A. Li, "Chemical Components and Bioactivities of Psidium guajava," *Int. J. Food Nutr. Saf.*, 2014.
- [13] A. Dey, "Alstonia scholaris R.Br. (Apocynaceae): Phytochemistry and pharmacology: A concise review," *J. Appl. Pharm. Sci.*, 2011.
- [14] M. S. Khyade, D. M. Kasote, and N. P. Vaikos, "Alstonia scholaris (L.) R. Br. and Alstonia macrophylla Wall. ex G. Don: A comparative review on traditional uses, phytochemistry and pharmacology," *Journal of Ethnopharmacology*. 2014.
- [15] I. A. Ross and I. A. Ross, "Cassia alata L.," in *Medicinal Plants of the World, Volume 1*, 2003.
- [16] V. E. Fernand *et al.*, "Determination of pharmacologically active compounds in root extracts of Cassia alata L. by use of high performance liquid chromatography," *Talanta*, 2008.
- [17] A. Syam, . Z., Y. Kurniati, N. A. Aulia, I. Purnama Wa, and M. A. Mansur, "Development and Biochemical Analysis of Pumpkin Seed (Cucurbita Moschata Durch) Biscuits," *Pakistan J. Nutr.*, 2019.
- [18] K. M. De Araújo *et al.*, "Identification of phenolic compounds and evaluation of antioxidant and antimicrobial properties of Euphorbia tirucalli L.," *Antioxidants*, 2014.
- [19] K. Carović-Stanko *et al.*, "Molecular and chemical characterization of the most widespread Ocimum species," *Plant Syst. Evol.*, 2011.
- [20] A. Umar *et al.*, "Antihypertensive effects of Ocimum basilicum L. (OBL) on blood pressure in renovascular hypertensive rats," *Hypertens. Res.*, 2010.
- [21] R. Baranauskienė, P. R. Venskutonis, K. Dewettinck, and R. Verhé, "Properties of oregano (Origanum vulgare L.), citronella (Cymbopogon nardus G.) and marjoram (Majorana hortensis L.) flavors encapsulated into milk protein-based matrices," *Food Res. Int.*, 2006.
- [22] E. Retno Atun Khasanah, "PEMANFAATAN EKSTRAK SEREH (CHYMBOPOGON NARDUS L.) SEBAGAI ALTERNATIF ANTI BAKTERI STAPHYLOCOCCUSEPIDERMIDIS PADA DEODORAN PARFUME SPRAY," *Pelita - J. Penelit. Mhs. UNY*, 2011.
- [23] R. Naz and A. Bano, "Phytochemical screening, antioxidants and antimicrobial potential of Lantana camara in different solvents," *Asian Pacific J. Trop. Dis.*, 2013.
- [24] Sukardiman, Suharjono, and N. D. Oktaviyanti, "Immunohistochemical study of Curcuma xanthorrhiza Roxb. and Morinda citrifolia L. ethanolic extract granules combination in high fat diet induced hyperlipidemia rats," *Int. J. Pharm. Pharm. Sci.*, 2014.