

Ethnomedicinal Plants Used by Batak Angkola Subethnic of Bulumario Village, Sipirok, South Tapanuli, North Sumatera

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ABSTRACT

Ethnobotany is interdisciplinary study of human and plants practical use. The study was conducted in Bulu Mario Village in Sipirok District, South Tapanuli. Bulu Mario Village is directly contiguous to the Sibual-Buali wildlife sanctuary. It has an area of about 3000 ha inhabited by 53 householders with a population of 1,319 people. The study was conducted to examine the extent of inhabitants' knowledge toward medicinal use of the plants. The data collection was done by doing field surveys, interviews, and participatory observation under ethnobotany study approach. The data were analyzed by descriptive analysis. Majority People in Bulumario Village are prefer using traditional medicine from plants when it comes to medical treatment. The locals' tradition regarding to various medicinal plants, how to harvest and apply it are all inherited by their ancestors. The people of Bulumariovillage have been used 65 species of medicinal plants belonging to 37 families for treatment.

Keywords: Ethnomedicine, medicinal plants, local knowledge, Bulu Mario.

1. INTRODUCTION

Indonesia is an archipelago consisting of approximately 17,000 islands. Geographical conditions are the reason for the creation of a rich biodiversity of flora and fauna on land and sea, so Indonesia is known as one of the 'Megabiodiversity' country [4]. In Indonesia there are 25,000-30,000 species of plants, more than 1,500 species of birds, 500-600 species of mammals, 8,500 species of fish and other animals in very large numbers [6] [13]. Various species of plants and wild animals like this are referred to as medicinal uses.

The utilization of plants for medication has been long known. As much as 80 percent of people in developing countries are relying on plants for their medication purpose [5]. The utilization of plants in Indonesia to preserve health has been long applied as civilization develops. One of the concrete evidences is the relief of medicinal plant in Borobudur Temple [10]. Every ethnicity in Indonesia has different perception on ethnomedicine, including about the utilization method of the plants as traditional medicine. This is influenced by the diversity of culture, tradition, and local wisdom of different ethnicities and regions [14].

There are many researchs about plant as traditional medicinal uses had been done in Indonesia, such as ethnomedicin study in the Kanum Tribe at Wasur Papua using 37 species of plants to treat 24 types of diseases [15], the BatakPhakpakSubethnic at SurungMersada used

128 species of plants to treat 24 types of diseases [11], the Batak Simalungun Subethnic used 92 species of medicinal plants [12], and people at SibanggorJulu Village, Mandailing Natal Regency are known to utilize 31 species of medicinal plants [7].

Bulumario Village is a village located in Sipirok District, South Tapanuli Regency, North Sumatra Province. Bulumario Village is a village directly adjacent to the Sibualbuali Nature Reserve. The people in Bulumario Village still upholds local wisdom, but detailed information regarding local wisdom in Bulumario village has not been widely identified. One of the local wisdom is utilization of medicinal plants.

The people of Bulumario Village still believe in natural medication made of natural resources from around the environment. The local people's knowledge in the utilization of medicinal plants shall be recorded to prevent it from being forgotten as the civilization develops. Therefore, ethnobotany research of medicinal plants in Bulumario Village is essential to save the people's knowledge on the species of plants and indirectly preserve that valuable plant.

2. MATERIAL AND METHODS

2.1. Time and Study Area

This study was held on August-September 2019 at Bulumario village, Sipiroksubdistrict, South Tapanuli Regency, North Sumatera Province. Astronomically Bulumario village is at 01° 35' 23" N and 099° 12' 33" E. The distance from SipirokSubdistrict to Bulumario village is 9.3 km. The inhabitants of Bulumario village are dominated by SubethnicBatakAngkola and the rest are SubethnicBatak Toba, BatakMandailing and BatakSimalungun. The main livelihoods of Bulumario people are sugar palm (*Arengapinnata*) farmers, Coffee (*Coffeaarabica*) & (*Coffearobusta*) farmers and rice (*Oryza sativa*) farmers.

2.2. Respondent

In this study the respondent was native inhabitants who were aged ≥ 30 years old and had knowledges about medicinal plants, such as traditional healer and people who had been their patients. The respondents consists of 45 people with 9 key informants and 36 general respondent. The key informants consist of 1 village head, 1 village secretary, 1 raja adat (Harajaon), 2 teachers, 2 traditional healer (Datu) and 2 pemangku adat (Hatobangun).

2.3. Tools and Materials

The tools used in research include logbooks, camera, plant identification books, and stationery. The materials used are 70% alcohol, camphor, observation sheet, questionnaire sheet, hanging label, plastic sample and newspaper.

2.4. Procedure

The researchs method that been used are interview and field observation. The interview object was key informant and general respondents obtained from the results of snowball sampling. Ethnobotany data collection was done by in-depth interview semi-structures method with questionnaire. The questions include the species of medicinal plants, the part of plants that been used, where the plants been found, the intensity of use and what type of disease that been treat. The data obtained were then analyzed qualitatively.

3. RESULT AND DISCUSSION

3.1. Result

The knowledge about medicinal plants is obtained by Bulumario people from several sources, but it mostly comes hereditarily. At Bulumario Village, there is a traditional healer that is known as "Datu". Datu is someone whom is believed to be able to cure various types of diseases. Based on the interview, it was found that Datu used several types of plants to cure the diseases. His knowledge on the medication was obtained from his parents, supernatural revelation or dream. Based on the results of interviews with 45 respondents, there were 65 plant species of medicinal plants belonging to 60 genera and 37 families (Table 1) used by SubethnicBatakAngkola for treatment. These 65 plant species are able to cure several disease categories such as gastrointestinal disease, fever-cold-cough, influenza, tumor/cancer, throat-nose-ear, skin and genital, wound- bleeding, internal disease, obstetrics and gynecology.

Table 1. Medicinal plants used by the Angkola sub-ethnic in Bulu Mario Village, Sipirok, South Tapanuli

Family	Latin name	Local name	Plant part used	Location	Use
Acoraceae	<i>Acoruscalamus</i>	Salimbatur	Rhizoma	Yard	Cold, stomachache, fever, bruised, cough, sprained
Alliaceae	<i>Allium cepa</i>	Bawangmerah	Bulb	Farm	Cold, massage oil
	<i>Allium sativum</i>	Bawangputih	Bulb	Farm	Cold, influenza, massage oil
	<i>Allium</i>	Bawangbatak	Bulb	Farm	Cold, wound, massage oil
	<i>Schoenoprasum</i>				
Amaryllidaceae	<i>Crinum asiaticum</i>	Oppuoppu	Bulb	Yard	Sprained
Arecaceae	<i>Areca catechu</i>	Pining	Fruit	Farm	Wound, postpartum
	<i>Arengapinnata</i>	Bargot	Nira	Farm	Constipation, diarrhea, ulcer, cold, fever, cough
	<i>Cocosnucifera</i>	Harambir	Stem	Farm	Postpartum (Mararang)
Asteraceae	<i>Gynuraproculumbens</i>	Sambungnyaw a	Leaf	Rice field	Constipation, diarrhea,
	<i>Blumeabalsamifera</i>	Galinggang	Leaf	Farm	Itchy and skin disease
	<i>Clibadiumsurinamensis</i>	Mardeka	Leaf	Farm	Wound, stomachache
	<i>E</i>				
Balsaminaceae	<i>Impatiens balsamina</i>	Haturangga	Leaf and Stem	Farm	Bump, prevent pregnancy
Begoniaceae	<i>Begonia isopteran</i>	Sanduduk	Leaf	Farm	Wound
Campanulaceae	<i>Hippobromalongiflor A</i>	Pahitmata	Leaf	Yard	Eyes drop
Casuarinaceae	<i>Casuarinasumatrana</i>	Anturmangan	Stem/ranting	Hutan	Postpartum (Mararang)
Caricaceae	<i>Carica papaya</i>	Botik	Leaf	Farm	Malaria, Postpartum
Compositae	<i>Crassocephalumcrepi Dioides</i>	Haba-haba	Leaf	Yard	Itchy, stomachache
	<i>Galinsogapariviflora</i>	Taya-tayababi	Leaf	Yard	Boil
	<i>Mikaniascandens</i>	Siropakpara	Leaf	Yard	Wound, asthma, stomachache
Convolvulaceae	<i>Ipomeabatatas</i>	Saunggading	Leaf	Farm	Boil, fever
Cucurbitaceae	<i>Cucumissativus</i>	Acimun	Fruit	Farm	Hypertension
Euphorbiaceae	<i>Heveabrasiliensis</i>	Hapea	Latex	Farm	Anti-snake poison
	<i>Jatropacurcas</i>	Jarak	Leaf	Farm	Stomachache, cold
	<i>Sapium sp.</i>	Modanghunik	Bark	Hutan	Diarrhea
	<i>Aleoritesmoluccanus</i>	Kemiri	Fruit	Farm	Hair blackening
Iridaceae	<i>Elleutherinebulbosa</i>	Bawangdayak	Bulb	Farm	Cholesterol and hypertension
Lauraceae	<i>Cinnamomumverum</i>	Kayumanis	Latex	Farm	Wound and boil
Leguminosae	<i>Mimosa pudica</i>	Putrimalu	Leaf	Yard	Wound and boil
	<i>Spatholobuslittoralis</i>	Bajakah	Stem	Hutan	Cancer
Loranthaceae	<i>Loranthus spp.</i>	Sarindan	Whole plant	Farm	Asthma and blood streamer
Mackinlayaceae	<i>Centellaasiatica</i>	Apapaga	Leaf	Yard	Hypertension, wound
Malvaceae	<i>Sidaacuta</i>	Sibagure	Whole plant	Farm	Rheumatic
	<i>Hibiscus archeri</i>	Bungaraya	Leaf	Yard	Fever
Meliaceae	<i>Lansiumdomesticum</i>	Laccat	Bark	Farm	Stomachache and asthma
Moraceae	<i>Artocarpuselasticus</i>	Torop	Stem	Hutan	Burn
Musaceae	<i>Musa paradisiaca</i>	Pisang raja	Fruit's skin	Farm	Wound, smallpox and breast milk streamer
Myrtaceae	<i>Psidiumguajava</i>	Jambuhorsik	Leaf	Farm	Diarrhea
Nyssaceae	<i>Litsea sp.</i>	Kulim	Stem	Forest	Postpartum (Mararang)
Phyllanthaceae	<i>Saurobusandrogynus</i>	Nasinasi	Leaf	Yard	Breast milk streamer

Piperaceae	<i>Piper betle</i>	Burangir	Leaf	Yard	Eyes drop, toothache, postpartum
Poaceae	<i>Cymbopogon citratus</i>	Sanggar- sanggar	Stem	Farm	Toothache
	<i>Dactyloctenium aegyptium</i>	Rumputoma	Leaf	Yard	Smallpox
	<i>Oryza sativa</i>	Eme	Seed	Rice field	Herpes
	<i>Pennisetum purpureum</i>	Rumputmanis	Leaf	Yard	Ulcer
Podocarpaceae	<i>Podocarpus neriifolius</i>	Hotang	Fruit	Forest	Ulcer
Primulaceae	<i>Labisia pumila</i>	Rumputpedas das	Leaf	Yard	Accelerate baby's birth
Rubiaceae	<i>Uncaria gambir</i>	Gambir	Fruit and leaf	Farm	Diarrhea, ulcer
	<i>Coffea robusta</i>	Kopi kampung	Seed	Farm	Rheumatic
	<i>Petungah spp.</i>	Kopi kopi	Stem	Hutan	Postpartum (mararang)
Rutaceae	<i>Citrus aurantiifolia</i>	Ute ruandg	Fruit	Yard	Cough
	<i>Citrus lemon</i>	Ute ruandg	Fruit	Yard	Cough
	<i>Zanthoxylum acanthopodium</i>	Sinyarnyar	Fruit	Hutan	Cold
Salicaceae	<i>Flacourtia rukam</i>	Rukam	Fruit	Hutan	Toothache
Solanaceae	<i>Solanum lycopersicum</i>	Torungasom	Leaf	Farm	Itchy
	<i>Solanum torvum</i>	Rimbang	Fruit	Yard	Anti-bee poison, anti-snake poison, stomachache
	<i>Capsicum annuum</i>	Lasiakrara	Fruit	Farm	Toothache
	<i>Capsicum frutescens</i>	Lasiaklamot	Fruit	Farm	Wound, Fever
	<i>Physalis angulata</i>	Pultak-pultak	Leaf	Yard	Hernia
Thymelaeaceae	<i>Phaleria macrocarpa</i>	Mahkotadewa	Fruit	Yard	Hypertension
	<i>Aquilaria malaccensis</i>	Gaharu	Stem	Forest	Internal disease
Vitaceae	<i>Vitis gracilis</i>	Gagatanharimau	Fruit	Forest	Tumor, cancer, stroke
Zingiberaceae	<i>Etlingera elatior</i>	Harias	Flower	Farm	Fever
	<i>Curcuma domestica</i>	Hunik	Rhizome	Farm	Cold
	<i>Kaempferia galanga</i>	Hasior	Rhizome	Farm	Cold, massage oil
	<i>Zingiber officinale</i>	Pege	Rhizome	Farm	Cough

From the 65 species of medicinal plants, the plant part had been used as medicine include leaf, stem, rhizome, bulb, latex, bark, flower, fruit, seed and whole plants. The uses of part plants depends on the need for treatment. The most widely used part of plants by the Bulumario people is leaf, which is 43% (Figure 1). Meanwhile medicinal plants are most commonly found in farms (Figure 2).

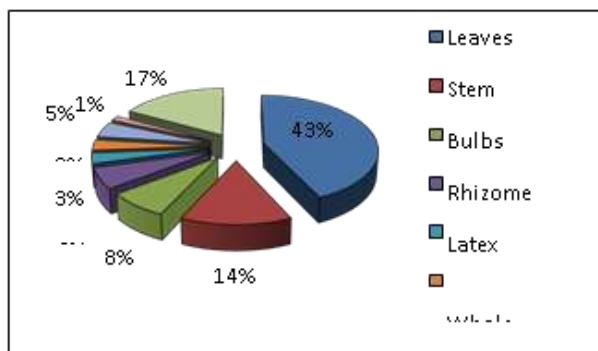


Figure 1. Percentage of plant part used

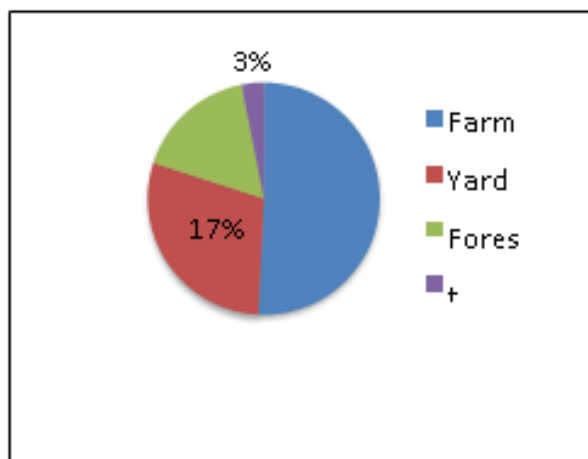


Figure 2. Percentage of location of medicinal plants

3.2. Discussion

However, as the civilization advances, the Bulumario people's belief on traditional medication keeps degrading. 65 species of plants are believed to be able to cure various diseases, this number is less compared to the other Batak sub-ethnicities. BatakPhakpakSubethnic used 128 species of plants to treat 24 types of diseases [11]. BatakSimalungunSubethnic used 92 species of medicinal plants [12], BatakKaroSubethnic used 181 species 61 family as medicinal plants[1]. The small number of medicinal plants in bulumario caused of several factors such as the plants' availability, diversity of people's belief, culture, tradition and local wisdom. The previous research, that was conducted at Mandailing Natal Regency, which was dominated by BatakAngkola sub-ethnic, showed that there were only 31 species from 17 families of medicinal plants [7]. This further confirms that the BatakAngkolasubethnic indeed used a little medicinal

plants. Bulumario people only use the plants as medicine in emergency or light diseases only, such as injured when farming, headache, stomachache, or colds. The reasons why people choose to use medicinal plants are because it is cheap, easy to find, and not dangerous to use [8].

The most common type of disease found in Bulumario village is wound. Because the majority of people in bulumario are farmers which mostly work with knives or machetes. So this causes the most commonly plant than been used by the people of bulumario is Siropakpara (*Mikaniascandens*). Almost all respondents mentioned this plant as a medicinal plant. Siropakpara is used by the people to heal wounds, such as wounds from knife or cleaver when farming. Some respondents also mentioned that siropakpara is able to cure stomachache. Siropakpara can be found in the yard, farm, or rice field's edges. *Mikaniascandens* is well known of its benefit. In India or Bangladesh, its leaf is extracted to cure various stomach problems and to heal wounds and bruises. Phytochemical result showed that *Mikaniascandens* contained vitamin A, C, B, flavonoid, steroid, alkaloid, tannin and saponin[3]. *Mikaniascandens* from the laboratory test result was not toxic and it was safe to use.

Furthermore, colds also common disease in Bulumario village because of the extremely cold weather conditions especially in the morning and evening. To treat colds many medicinal plants are used by people in bulumario, but the most frequently mentioned is Salimbatuk (*Acoruscalamus*). This plant usually be used to cure cold, cough, influenza and sprain. This plant also believed to be able to repel demons and cure possessed person. Salimbatuk is commonly found on sewer. Salimbatuk (*Acoruscalamus*) also as known as sweet flag has been long known as a medicinal plant since the last 2000 years. In Chinese medication, *Acoruscalamus* is recognized as a medicine for constipation and swelling. Traditional healers in India 'Ayurveda', use *Acoruscalamus* as a medicine for cold, asthma, sedative and cough; while in the West, it is used to cure digestive problems. *Acoruscalamus* known contains antimicrobial activity which inhibits the growth of bacteria, yeast or filamentous fungi, and it also contain antioxidant activity [2].

From the interview result, plant's part that is most commonly used in bulumario village is the leaf. The people of Bulumario still upholds the tribal value and customs. One of the tribal customs that is still applied by the people is the rule to not to harm the environment. This affects the plant utilization part, in which the leaf utilization will not damage the plant's growth. Most plant parts widely used by society is the leaf part, because it's easier to get whenever the community needs it [9]. Only few people of Bulumario who own plants at their yards, because the majority of them are farmers. They only plant for foods, medicine or livelihood plants in the farm. This makes the medicinal plants to be much more often found at the farm compared to the other places. Only a few medicinal plants are from another place such as the forest. One of them is "gagatanharimau" (*Vitisgracilis*). The people believe that gagatanharimau is a plant that is able to

heal internal wound because this plant is a plant that is eaten by tigers if they are wounded or sick.

4. CONCLUSION

The Batak Angkola Subethnic in Bulumario Village is known to still preserve cultural values, one of which is the traditional use of medicinal plants. Proven from the presence of 65 plant species that are known to the public can treat various types of diseases.

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