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Utilization of medicinal plants by the Lintang Tribe Community in Talang Baru Village, Empat Lawang District, Indonesia

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Abstract. *Mawadha NR, Febryano IG, Tsani MK, Duryat. 2023. Utilization of medicinal plants by the Lintang Tribe Community in Talang Baru Village, Empat Lawang District, Indonesia. Asian J Ethnobiol 6: 20-25.* The use of plants as medicine is still maintained for generations. This study aimed to determine the plant species, parts, and habitus used as medicine by the Lintang Trible, Empat Lawang District, South Sumatra, Indonesia. Data were collected using a qualitative approach through in-depth interviews involving observations and documentation studies. Data analysis was carried out descriptively to determine the use of plants in traditional medicine. The results showed that 57 species of plants belonging to 35 families were used as medicine. The most widely used plant family was Zingiberaceae because they can grow easily and are widely used as cooking spices by the people in Talang Baru Village. The plant parts used were root, stem, fruit, flower, leaf, shoot, rhizome, sap, bark, and fruit skin. The leaf was the most widely used part of the plant because it is easy to obtain, has many properties, and removing several leaves will not damage the plants. The plants used can be found in various habitus, namely herb, vine, fern, palm, shrub, tree, and succulent plants. Herbs were the most used plants for medicine. The government should support the conservation of these medicinal plants by creating special places to cultivate medicinal plants so that they remain sustainable.

Keywords: Local knowledge, medicinal ingredients, medicinal plants, plant properties

INTRODUCTION

Ethnobotany is the study of the use of plants by the community from generation to generation over time to fulfill basic needs, such as clothing, food, shelter, and medicine (Hadijah et al. 2016; Dwi et al. 2019). The contribution and role of ethnobotany in the present and future generations will be very broad and varied, especially in the role of new drug discovery (Hakim 2014). One branch of science to discover new chemical compounds in the manufacture of modern medicines is ethnomedicine (Silalahi 2016). Ethnomedicine is a study of the perceptions and conceptions of local people about health by utilizing medicinal plants (Syarifuddin and Amalia 2021). It includes activities such as finding, selecting and determining, then developing plant materials into a new drug (Diliarosta et al. 2021). Ethnomedicine is a branch of health anthropology that studies the origin of a disease, methods of treatment, and causes of disease based on certain groups of people. In the field of health anthropology, various terms have appeared, such as traditional medicine (Rona and Pramono 2015).

Traditional medicine is a treatment that has been carried out for generations by utilizing medicinal plants (Sari et al. 2021). This treatment is still being used today despite the rapid development of government health service centers (Fitriani and Eriyanti 2020) because it is used as a safe option and has been clinically proven by many medical institutions (Ihsan et al. 2016; Silalahi et al. 2018; Syarifuddin and Amalia 2021). Their continuous use by the community has proved the efficacy of medicinal plants, so it has become a culture of using medicinal plants (Auliani et al. 2014).

Medicinal plants are used in whole or in part as medicinal ingredients (Jafar and Djollong 2018; Siregar et al. 2020; Kastanja and Patty 2022) that have traditionally been used for treatment (Jumiarni and Komalasari 2017). Traditional medicinal substances are still simple, pure, and unprocessed (Hildasari and Hayati 2021). Parts of plants that are commonly used are leaf, root, stem, rhizome, fruit and flower (Musaicho et al. 2021; Adriadi et al. 2022). The community can use these parts to be mixed according to their needs and can be used as medicine in traditional medicine (Hardianti 2021). Medicinal plants are now a concern because many community groups have begun to divert the use of modern medicines to herbal medicines (back to nature) due to concerns about the side effects of the modern medicines (Supriyanto et al. 2014; Sembiring et al. 2015; Mirza et al. 2017; Mayangsari et al. 2019).

Each ethnic group has its knowledge and way of using plants as medicinal ingredients. Each ethnic group in Indonesia, such as Village Dayak tribes in Pakak Village, Sintang District, utilize 25 species of medicinal plants (Supiandi et al. 2019), Dayak Kanayant tribes in Mamek

Village, Landak District, 40 species (Riadi et al. 2019), Dayak Iban Villages Tekalong and Bejabang Kapuas Hulu District, 21 species (Yusro et al. 2019), and the Malays in Durian Sebatang Village, Kayong Utara District 93 species (Wulandara et al. 2018). One community group that still maintains medicinal plants is the Lintang Tribe.

The Lintang tribe is a community group that is still practicing traditional customs and is rich in local knowledge. This local knowledge appears as a culture of using plants as medicine (Nurrani et al. 2015; Andika et al. 2020). Knowledge of medicinal plants is currently declining due to cultural changes caused by modernization and the lack of written documentation (Napagoda et al. 2018). This knowledge is considered no longer valid and the younger generation is less interested in learning local knowledge by utilizing plants. There is a concern that this heritage will gradually become extinct. Documentation of this knowledge is very helpful in preserving the diversity of plants utilized by the community (Kandari et al. 2012; Setiawan and Qiptiyah 2014). This study aimed to determine the plant species, parts, and habitus used as medicines by the Lintang Trible in Empat Lawang District, South Sumatra, Indonesia.

MATERIALS AND METHODS

The data collection for this research was conducted in September-October 2022 in Talang Baru Village, Muara Pinang Sub-district, Empat Lawang District, South Sumatra Province, Indonesia. Talang Baru Village is an old village formerly known as Tanjung Lenting, which is administratively bordered on the west by Muara Pinang Baru Village and on the east by Sapapanjang Village. This village is located in a series of Barisan Hills, with altitudes ranging from 300 m to 2500 m. The climate is a tropical rainforest with high rainfall throughout the year, with an average of 2700-3000 mm. The temperature in this area ranges from 18°C to 30°C. The fertile area makes various plants planted by the community grow well.

This research used a qualitative approach with a case study method. Data were collected through in-depth interviews and observation. Eleven key informants were determined purposely, i.e., traditional healers or *battra* (5 people), patients (5 people), and community leaders (1 person). *Battra* is a native of the Lintang Tribe who can treat diseases using plants and is trusted by the local community to carry out the treatment. The collected data were processed without a mixture of researchers' thoughts and analyzed qualitatively, i.e., by making data transcripts, coding, data categorization, provisional inferences, final triangulation, and inferences to find out the species, parts, and habitus of medicinal plants used by the community of Lintang Tribe.

RESULTS AND DISCUSSION

The Lintang Trible in Talang Baru Village, who own land close to village settlements, tend to develop their gardens using an agroforestry system. Agroforestry is a land management system aimed at solving food problems, combining agricultural crops and plantation crops (trees) (Salampessy et al. 2015; Rajagukguk et al. 2018). In line with the research of Afifah et al. (2021) agroforestry is a type of land use by mixing woody plants (forestry) with plantations, agriculture or plantations.

The garden with an agroforestry system in this village is called "umo." The community use umo as the main source of income to fulfill their daily needs. The informants mentioned that many plants were used as medicine in the village garden or forest far from home. Gardens with an agroforestry system can make a major contribution to people's lives in direct income but with small capital. (Rajagukguk et al. 2018; Wanderi et al. 2019). Agroforestry optimizes land productivity with various species in one land management system (Puspasari et al. 2018).

The composition of plant species in the agroforestry garden in this village consisted of tree and non-tree species, producing vegetables, fruits, tubers, and seeds. The trees often found on agroforestry land in community gardens were *bambang lanang* (*Michelia campaca*), merambung (*Vernonia arborea*), *sengon* (*Albizia chinenshis*), *jati* (*Tectona grandis*), *durian* (*Durio zibethinus*), *jengkol* (*Pithecellobium lobatum*), *petai* (*Parkia speciosa*), macang (*Mangifera foetida*), *sokon* (*Artocarpus communis*), and *mileng* (*Aleurites moluccanus*). The species of non-tree plants often found on agroforestry land include banana (*Musa acuminata*), areca nut (*Arenga pinatta*), coconut (*Cocos nucifera*), robusta coffee (*Coffea canephora*), cocoa (*Theobroma cacao*), areca (*Areca catechu*), and papaya (*Carica papaya*).

The plants used for medicine by the Lintang Tribe community in Talang Baru Village consisted of 57 plant species from 35 families (Table 1). Land management for the Lintang Trible increases income not only through trees but also other plants, such as medicinal plants. Management with this system is considered more profitable because the community can harvest medicinal plant commodities simultaneously with trees as canopy. Plants with high crowns can be protective for lower plants (Febryano et al. 2017). Some research results show that plants grown in the shade of trees provide several advantages for farmers compared to plants grown under the full sun (Febryano 2008). This plantation pattern produces diverse and sustainable yields (Larassati et al. 2019), increasing crop productivity and reducing the risk of crop failure (Dewi et al. 2017).

Plants used by the community are divided into two: cultivated and wild. There were 55 species of cultivated plants, utilized by the community both for personal consumption and for sale. There were two wild species, namely *Ageratum conyzoides* (Dutch grass) and *Stenochlaena palustris* (brother fern). The high species diversity of medicinal plants in this village is due to the high soil fertility. The habit of the local people who still use plants as medicine in traditional medicine for generations also has an impact on the presence of plants in this village. The composition of plant families used by the community is given in Figure 1.

Table 1. Species of medicinal plants used by the community

Plant family	Latin name	Local name
Zingiberaceae	*Kaempferia galanga*	Kencur
Zingiberaceae	*Zingiber montanum*	Mengelai
Acoraceae	*Acorus calamus*	Jegangau
Blechnaceae	*Stenochlaena palustris*	Paku abang
Amaranthaceae	*Celosia cristata*	Bungo abang
Balsaminaceae	*Impatiens balsamina*	Pacar ayek
Moraceae	*Artocarpus communis*	Sokon
Caricaceae	*Carica papaya*	Gedang
Zingiberaceae	*Curcuma zedoaria*	Kunyit putih
Zingiberaceae	*Curcuma zanthorrhiza*	Temulawak
Zingiberaceae	*Curcuma aeruginosa*	Temuireng
Acanthaceae	*Strobilanthes crispa*	Pecah beling
Lamiaceae	*Orthosiphon aristatus*	Kumis kucing
Euphorbiaceae	*Aleurites moluccanus*	Mileng
Annonaceae	*Annona muricata*	Serkayo
Moringaceae	*Moringa oleifera*	Kelor
Asphodelaceae	*Aloe vera*	Lidah buaya
Cactaceae	Cactaceae	Lidah badak
Zingiberaceae	*Curcuma longa*	Kunyit
Zingiberaceae	*Zingiber officinale*	Jahe abang
Poaceae	*Cymbopogon nardus*	Serai
Zingiberaceae	*Alpinia galanga*	Kuas
Pandanaceae	*Pandanus amaryllifolius*	Pandan
Basellaceae	*Anredera cordifolia*	Binahong
Menispermaceae	*Cyclea barbata*	Pupuk jadi
Crassulaceae	*Kalanchoe pinnata*	Cocor bebek
Rubiaceae	*Morinda citrifolia*	Mengkudu
Arecaceae	*Cocos nucifera*	Niogh
Arecaceae	*Arenga pinnata*	Belulok
Lauraceae	*Persea americana*	Jambu mentega
Fabaceae	*Indigofera suffruticosa*	Timbok pipet
Anacardiaceae	*Mangifera foetida*	Macang
Rutaceae	*Citrus x aurantiifolia*	Jeruk nipis
Asteraceae	*Ageratum conyzoides*	Rumput belanda
Poaceae	*Oryza sativa*	Padi
Euphorbiaceae	*Claoxylon indicum*	Daun tepu
Fabaceae	*Senna alata*	Ketepeng
Annonaceae	*Annona squamosa*	Benonok
Fabaceae	*Leucaena leucocephala*	Lamtoro
Euphorbiaceae	*Acalypha hispida*	Jamar tali
Myrtaceae	*Psidium guajava*	Jambu biji
Rubiaceae	*Coffea* sp.	Kopi
Araceae	*Colocasia esculenta*	Talas
Magnoliaceae	*Michelia champaca*	Bambang lanang
Malvaceae	*Ceiba pentandra*	Kapok
Zingiberaceae	*Elettaria cardamomum*	Perlako
Asteraceae	*Vernonia amygdalina*	Afrika
Musaceae	*Musa acuminata*	Pisang
Sapotaceae	*Manilkara zapota*	Semilo
Apiaceae	*Apium graveolens*	Gudung sop
Myrtaceae	*Eugenia polyantha*	Salam
Piperaceae	*Piper betle*	Sirih
Euphorbiaceae	*Ricinus communis*	Jarak
Malvaceae	*Gossypium*	Kapas
Oxaldaceae	*Averrhoa bilimbi*	Belimbing besi
Piperaceae	*Piper longum*	Cabe akar
Piperaceae	*Piper nigrum*	Sahang

The most widely used medicinal plants by the community come from the Zingiberaceae family (9 species), because they can grow easily, do not need much care, and has many benefits (Gunawan et al. 2022; Nasution et al. 2020), such as for cooking spice. This family, according to *Battra*, is also used because people consume it to maintain health.

The species of medicinal plants found in this study were more numerous than those used by the same tribe in a different location, i.e., 49 species from 32 families in Rantau Kasai Village, Empat Lawang District (Andika et al. 2020). The difference in the number of types of medicinal plants was due to differences in knowledge and experience of the community in using plants as medicine passed down from generation to generation (Takoy et al. 2013; Sembiring et al. 2015; Royyani and Rahayu 2016). The local knowledge is influenced by the environmental conditions or forests close to where people live Yuana et al. (2016).

Parts of plants used by the community in traditional medicine include root, stem, fruit, flower, leaf, shoot, rhizome, latex, bark, and fruit skin (Figure 2). The most part of the plant was the leaf. Similar research conducted by Andika et al. (2020) in the Lintang Tribe community also found that leaf is the most widely used. Leaves are the most widely used part as medicine because they are easy to obtain, easy to use, not so damaging to plant when some of them are harvested, and easy to process to treat diseases (Arniawati 2018). Other factors influencing the use of medicinal plants by a community are efficacy and social relations (Menendez et al. 2015). The high utilization of this leaf is a good form of community wisdom because using the leaves alone does not disturb the growth of these plants.

The plants used by the community had 46 properties for treating various diseases (Figure 3). Plants are used as medicine by the community because they have different benefits and are considered to have no harmful side effects for users (Mayangsari et al. 2019). Diseases experienced by the community can be caused by changes in the environment (weather), wrong eating and interference from spirits. These diseases, according to *battra*, are relatively mild and usually people do self-medication without their help. The community will ask for *battra*'s assistance if their illness cannot be handled by themselves, such as bladder stones, diabetes, and shortness of breath. People can do the treatment at any time, but people usually do treatment at night because treating at night is considered more effective, and the *battra* has more time at night, free from other work activities.

Pelokang et al. (2018) state that medicinal plants can cure chronic, infectious, and non-communicable diseases, and maintain health. Examples of non-communicable diseases are internal fever, wounds, warts, and cancer. The chronic diseases include kidney disease, high blood pressure, ulcers, and cancer. Health maintenance includes treating problems of body odor, bad breath, toothache, and yellow teeth.

In general, in the field of medicine, diseases are categorized into two, namely degenerative diseases and infectious diseases. Infectious disease is a disease that easily attacks the body (Besung and Kerta 2009). Many people in this village experience infectious diseases because these diseases are the most health problems in developing countries (Novard et al. 2019). The infectious

diseases that usually attack the community are malaria, ringworm, diarrhea, and scabies. Degenerative disease is a disease that is difficult to repair characterized by degenerative (deterioration of function) of cells and organs that are influenced by lifestyle (Notoatmojo 2007). These diseases, such as diabetes and high blood pressure, are treated by using various plants. All medicinal plants do contain natural chemical compounds, which have pharmacological effects and important activities as anti-disease agents (Rahmawati et al. 2012). The World Health Organization (WHO) recommends using traditional medicines including herbal medicines in maintaining public health, prevention, and treatment of diseases, especially for chronic, degenerative diseases and cancer (Setiawati et al. 2016).

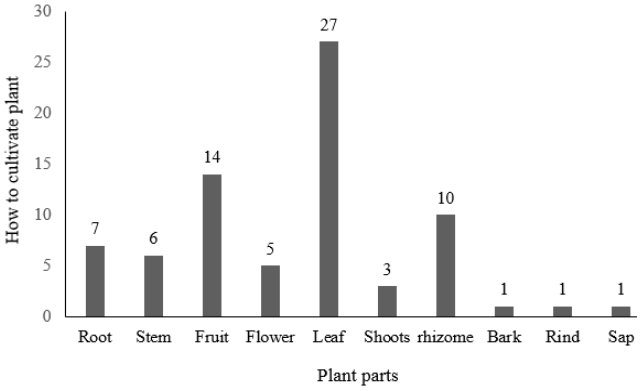

Figure 2. Parts of plants used as medicine

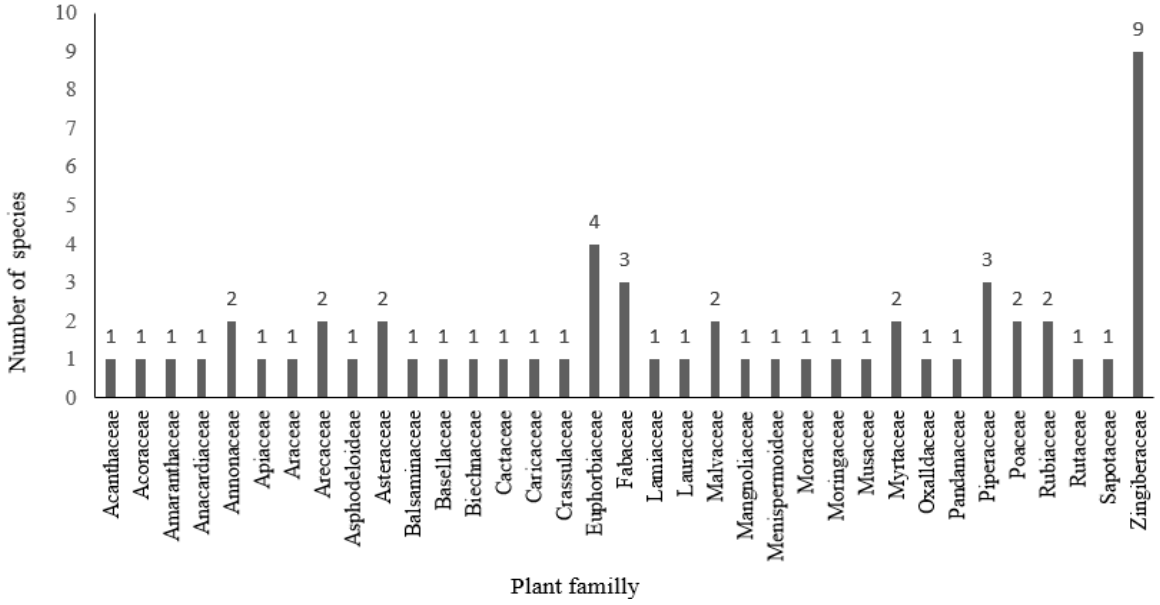

Figure 1. Medicinal plants by family

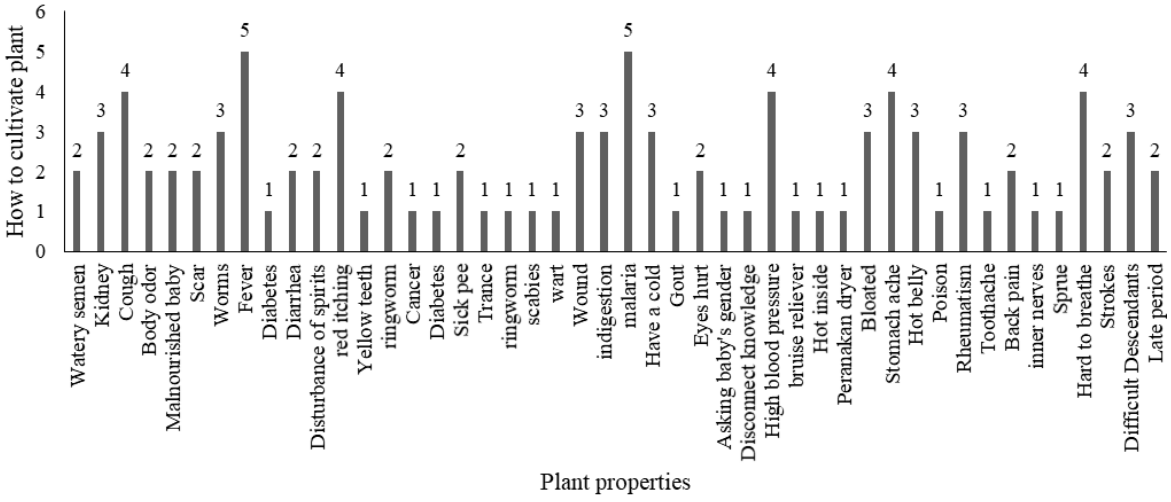

Figure 3. Plants based on efficacy

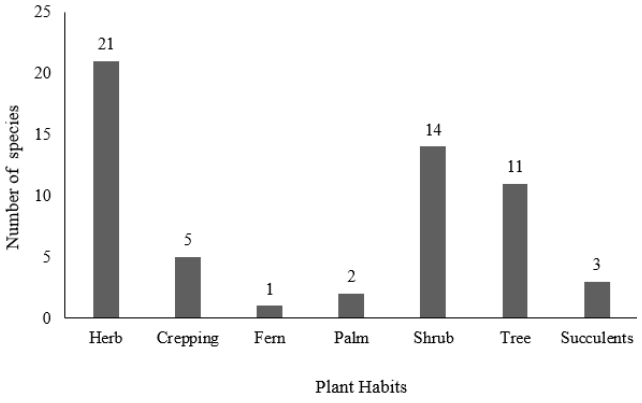

Figure 4. Habitus of plants

The vine known as betel (*Piper betle*) is widely used by the community to treat various health problems such as yellow teeth, body odor and sore eyes. Red ginger (*Zingiber officinale*) is also widely used by local people because this plant is considered capable of treating several diseases at once, such as malaria, fever after giving birth, colds, and gout. The succulent plant known as *Cocor Bebek/sedingen* (*Kalanchoe pinnata*) is widely used by the community to treat various health problems such as a hot stomach, fever, difficulty getting pregnant, and malnourished babies. In addition, lime (*Citrus x aurantiifolia*) is this village's most popular plant species because it treats various disorders, such as disturbances by spirits, colds, and stomachaches. The use of lime in the world of traditional medicine in this village has become a necessity; even people who will come for treatment will automatically bring the fruit to be used as initial medicine before doing the treatment.

The species of plants used as medicine come from various habitus, namely herbs, vines, ferns, palms, shrubs, trees, and succulent plants (Figure 4). The habitus of the plants most widely used as medicine by the community was an herb, 21 species, because herbs are easy to find and are planted in the yard of the house. Riconadi et al. (2020) and Hidayah et al. (2022) also that herbs are commonly found in yards owned by the community. Another habitus often used by the community is shrubs because many are planted in the gardens. Nurchayati and Ardiyansyah (2018) also found in their research on the Using Tribe community in Banyuwangi District the community most widely used that shrub.

This study concluded that the Lintang Tribe in Talang Village used 57 plant species consisting of 35 families for medicine; the frequently used family was Zingiberaceae, the most frequently used part was a leaf, and the most frequently used habitus was an herb. Therefore, the use of medicinal plants as part of the culture of this tribal community must be preserved to maintain the diversity of medicinal plant species and maintain local community knowledge about medicinal plants.

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