



Local Knowledge of Medicine Plants by the Lintang Tribe in Talang Baru Village, South Sumatra Province, Indonesia

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ABSTRACT

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Local knowledge in utilizing plants as traditional medicine is a very important study. The purpose of this study was to find out how to process plants used by the Lintang Tribe in Talang Baru Village, South Sumatra Province, Indonesia. Data collection was carried out using a qualitative approach through in-depth interviews, involved observations, and documentation studies. Data analysis was carried out descriptively to determine the use of plants in traditional medicine. The results showed that the processing of plants used as medicine by the community was carried out in a simple way, namely chopped, grated, pounded, burned, stir-fried, squeezed, boiled, kneaded, and there were several plants that were consumed directly. The way to process the highest plants is by boiling them. This method is done to remove the medicinal substances contained in a plant. In general, the method of processing plants is done singly, but some plants are also made like potions and mixed with other ingredients. The government needs to provide guidance on strategies for developing plants that have the potential to be used as medicine to increase people's income.

1. INTRODUCTION

Local knowledge is a concept that is obtained based on the experience of the community for generations in certain areas in traditional medicine systems [1, 2]. This concept appears in the form of a culture of using plants in traditional medicine systems [3]. The use of these plants is based on knowledge that has been adhered to as traditions and customary laws that have been passed down orally from generation to generation by the community [4, 5]. Many people get convenience with local herbal ingredients based on local knowledge [6, 7]. This knowledge is an important basic science for the community because it has a major impact on the existence of medicinal plants [8].

Medicinal plants are biological resources that can be used as medicine, and if consumed can increase the body's immunity [9]. In line with research [10-12] said that medicinal plants are all types of plants that have long been used as herbal medicines to treat various diseases, are safe, effective, environmentally friendly, and efficacious for use by the community. Medicinal plants are plants used as ingredients in traditional medicine because they are believed to have more beneficial benefits [13]. Medicinal plants are plants that have medicinal properties and have been used by community groups to meet their health needs [14]. Community groups are still using plants as medicine based on local knowledge passed down from generation to generation [15].

People use plants by processing plant parts to be used as medicine. Parts of plants that are usually processed to be used as medicine consist of roots, stems, leaves, and fruit [16]. In

research of Mudau et al. [17] that the parts of plants used for traditional medicine are roots, stems and leaves. Plant processing by the community is not only used for health care but also increases people's income [18]. People in their daily lives have long used plants as an alternative to meeting their need for medicines [19]. The need for these drugs is currently declining rapidly due to cultural changes due to the influence of modernization and the lack of written documentation [20, 21]. This knowledge is considered less important and the younger generation is currently less interested in learning this local knowledge [22]. It is feared that this will result in this heritage being gradually lost. Documentation of traditional knowledge and management of natural resources is very helpful in preserving the diversity of plants used by the community [23, 24].

One of the tribes that utilizes local knowledge in the utilization of medicinal plants is the Lintang Tribe in Talang Baru Village, South Sumatra Province, Indonesia. They have local knowledge in the utilization of medicinal plants. In addition, its utilization is used in various ways, such as consumed directly, chopped, grated, pounded, baked, sautéed, squeezed, boiled, and kneaded. The study conducted by Mawadha et al. [25] in the Lintang community in Talang Village, Indonesia utilized 35 plant families, a family that is widely used as medicine, namely Zingiberaceae with a habitus of herbs. In addition, research by Andika et al. [26] in the Lintang Tribe in Rantau Kasai Village, Indonesia utilized 32 plant families, the most widely used family being Euphorbiaceae with a bush habitus.

This study aims to obtain and document data on how to process plants that are used as medicine by the community, so that the local wisdom of medicinal plants of the Lintang Tribe can be preserved from generation to generation. The structure of the discussion of this paper consists of what parts of the plant, how to process them, the form of medicinal plants, and the use of plants as medicine.

2. METHODOLOGY

Data collection for this study was conducted in September-October 2022 in Talang Baru Village, Muara Pinang District, Empat Lawang Regency, South Sumatra Province, Indonesia. During the data collection process, the researcher lived and mingled with the local community in the village. The approach used in this research is a qualitative approach with the case study method. Data were collected through in-depth interviews, involved observations, and documentation studies. Key informants were determined by purposive sampling technique. The selected informants were *Battra* (5 people), patients (5 people), community leaders (1 person). *Battra* is a native of the Lintang Tribe who has the ability to treat diseases using plants and is trusted by the local community to carry out treatment. The raw data obtained is then collected in documents and processed without any mixture of researchers' thoughts and analyzed qualitatively. Data obtained through in-depth interviews (*in-depth interviews*) were then analyzed by making data transcripts, coding, data categorization, provisional conclusions, triangulation, and final conclusions to determine the processing of plants used as medicine by the Lintang Tribe.

3. RESULTS AND DISCUSSION

There are 57 ways of processing plant species that are used as medicine by the Lintang Tribe in Talang Baru Village. Medicinal plants used as medicine by the community consist of tree species, herbs, vines, ferns, palms, shrubs, trees, and succulent plants. These types of plants are deliberately planted or grow naturally on a plot of land or garden. Community

gardens are usually referred to as "*umo*" or "*gimbo*". *Umo* or *gimbo* is a garden that is used by the community as the main source of income to fulfill their daily needs, one of which is as a medicinal ingredient. These medicinal ingredients are used in recipes for various purposes such as diabetes, hypertension, and other diseases [27]. The use of plants used as medicine is often documented [28, 29]. In research of Al-harbi [30], plants are used to treat diseases of the digestive system, skin diseases, respiratory system diseases, oral and dental diseases, urinary system diseases, eye diseases, bone and joint diseases, and blood diseases. According to public belief, this disease can be overcome by using medicinal plants extracted from plant parts such as flowers, fruits, roots, shoots, stems, bark and leaves to treat various diseases [31]. Processing of plants used as medicine can be seen in Table 1.

The processing of medicinal plants is carried out in a simple way, namely chopped, grated, pounded, baked, stir-fried, squeezed, boiled, kneaded, and consumed directly. Processing of the highest plant species is by boiling, namely as many as 15 ways of processing. This method is done to remove the medicinal substances contained in a plant. The reaction from the plant will be driven more quickly in this way. This is in line with the research by Pagea et al. [32] in Sepang Village, Mempawah Regency, that processing by boiling has the function of removing extractive substances contained in plants. Boiling is the most frequently used process in making medicine [33]. The Kanayatn Dayak tribe in West Kalimantan boils medicinal plants so that the active ingredients dissolve quickly in water and heal faster after drinking the boiled water [34]. The same is also found in research in Kenya that the Maasai community mostly uses decoctions [35]. Other studies also reported that boiling is the most preferred way of making medicine [36]. Each medicinal plant has properties. This is supported by research by Moshi et al. [37] stated that almost all medicinal plants are multipurpose. The preference for the boiling process is thought to be due to the easy preparation, and various solvents such as water and honey can be added to adjust the taste of the medicine being prepared. Herbal medicines made from plant parts are important and effective components to be processed and used [38]. The method of processing plants used by the community can be seen in Figure 1.

Table 1. Processing of plants by Lintang Tribe in Talang Baru Village

			
<p>Plant name: <i>kencur</i> (<i>Kaempferia galanga</i> L.)</p>	<p>Plant name: <i>mengelai</i> (<i>Zingiber cassumunar</i> Roxb.)</p>	<p>Plant name: <i>jerngau</i> (<i>Acorus calamus</i>)</p>	<p>Plant name: <i>paku merah</i> (<i>Stenochlaena palustris</i> Burm.f.)</p>
<p>Processing: Grate the rhizome, then squeeze it to separate the water and dregs, the water is used to treat flatulence. The rhizomes are boiled together with various mixtures of ingredients, namely alcohol, yeast, and pepper, the boiled water is used to treat strokes / smeared</p>	<p>Processing Grate the rhizome, then squeeze out the water, separate the dregs and water, then use the water as a medicine to treat flatulence.</p>	<p>Processing: Shredded and then squeezed out the water, separate the juice from the dregs, the water is used as a medicine to treat flatulence / Drink Chopped the rhizome of the jerngau until it is quite smooth then used to deal with disturbances from spirits / Smeared on the throat</p>	<p>Processing: The root part of the nail is boiled until it boils. The boiled water is used as a medicine to treat difficult heredity/drinking Boil the tops of the leaves until they boil, the boiled water is used to treat sore eyes / Apply it to the eye area, such as washing your face</p>



Plant name: *jengger ayam (Celosia cristata L.)*

Processing :
The flower and root parts are boiled, then the boiled water is used to overcome difficult offspring and late menstruation/Drinking

Knead the leaves, then the squeezed water is used to treat shortness of breath / smeared on the respiratory tract



Plant name: *pacar air merah (Impatiens balsamina L.)*

Processing:
Knead 3 flowers of different colors, namely white, red, and yellow flowers, then filter the flower water, the water is used as a medicine for worms / bathing

Chopped roots and leaves to deal with late menstruation / Attached to the outside close to the uterus



Plant name: *pisang (Musa acuminata Colla.)*

Processing:
Directly used by taking the skin of the banana is used to remove scars, and remove warts / rubbed



Plant name: *gudong sop (Apium graveolens L.)*

Processing:
The leaves and stems are boiled, then the boiled water is used as a medicine to reduce high blood pressure



Plant name: *lidah buaya (Aloe vera L.)*

Processing:
The leaves are chopped into pieces, the chopped leaves are used as medicine to treat malnourished babies / babies who don't develop / stick them on.



Plant name: *sawo (Manilkara zapota L.)*

Processing:
Grate the fruit, then strain and separate the water and pulp, then take the water by adding another mixed ingredient, namely salt, this mixed water is used as a medicine for diarrhea / drinking



Plant name: *gedang (Carica papaya L.)*

Processing:
Boiled the tops of the leaves / leaves, then the boiled water is used to treat diabetes and part of the leaf to overcome colds / Drink



Plant name: *sukun (Artocarpus altilis parkinson)*

Processing:
Boiled the leaves, the cooking water is used as a medicine to cure back pain



Plant name: *temulawak (Curcuma zanthorrhiza Roxb.)*

Processing:
Grate the rhizome, squeeze the results of the grated material, separate the water and the dregs, the water is used as a rheumatic medicine / drink



Plant name: *jaha (Zingiber officinale Roscoe.)*

Processing:
Boil the rhizome by adding a mixture of ingredients from other plants such as galangal, turmeric, lemongrass, salam, this cooking water is used as a concoction to treat malaria and fever after giving birth.
Finely knead the rhizome, then add various types of additional ingredients such as yeast, alcohol, and pepper powder. This ingredient is used to treat gout and colds.



Plant name: *kumis kucing (Orthosiphon aristatus Blume.)*

Processing:
Boil the root part with a mixture of other plants, namely the broken glass root, the boiled water from the two ingredients is used as a medicine for sore urine / drink



Plant name: *kelor (Moringa oleifera Lam.)*

Processing:

Squeezed out the leaves and water, this material is used as a medicine to break up hereditary knowledge/bathing

The flower parts are boiled, by taking the flowers lying down and used (if you want to have male offspring) and on your stomach (women).



Plant name: *jarak (Ricinus communis L.)*

Processing:

Boiled the leaves and then mixed with salt, the material is used as a medicine for itching / bathing.

Take the sap at a distance directly, the sap is used as a medicine for canker sores / smeared on canker sores.



Plant name: *temuireng (Curcuma aeruginosa Roxb.)*

Processing:

Grate the rhizome, squeeze out the grated material, separate the water and the dregs, the water is used as a rheumatic medicine/drink



Plant name: *kemiri (Aleurites moluccanus L.)*

Processing:

The fruit part of the candlenut is burned, then mashed by mashing the part that has been burned, puree until it emits oil-like, the refined product is then used as a medicine for ringworm, scabies, ringworm / smeared



Plant name: *kapok (Ceiba pentandra L.)*

Processing:

It is easy to burn the stems until they release water, the water is used to treat coughs and shortness of breath



Plant name: *sirih (Piper betle L.)*

Processing:

The leaves are pounded, the material that has been pounded is then used to treat yellow teeth / eaten while rubbing it all over the teeth. Squeeze the leaves, then make a bath potion, but the potion used as an antidote to body odor is bath/drinking water. Boil the tops of the leaves, the water is used as an eye sore medicine /applied directly.



Plant name: *pecah beling (Strobilanthes crispata)*

Processing:

The roots/leaves are boiled, the boiled water is used as a medicine for backache/drink



Plant name: *kapas (Gossypium hirsutum L.)*

Processing:

Pounded the flower parts are not so finely used to remove scars / smeared on the scars regularly



Plant name: *sirsak (Annona muricata L.)*

Processing:

Take soursop fruit that is ripe or can be used directly to treat ulcers / eaten.

Boil the leaves in 3 cups of water, with odd numbered leaves, for example 5, 7, 9, 11, with the addition of a mixture of other herbs, namely Nona leaves, until it boils and becomes 1 cup, the water is used to reduce high blood pressure



Plant name: *ketepeng cina (Senna alata L.)*

Processing:
Squeezed the leaves to produce water, this water will be used as a medicine for ringworm / smeared



Plant name: *salam (Eugenia polyantha)*

Processing:
Boil the leaves, then add the mixture of galangal rhizome, turmeric, lemongrass, and ginger, the boiled water from all the ingredients is then used as a medicine for malaria, and fever after giving birth/bathing



Plant name: *belimbing besi (Averrhoa bilimbi L.)*

Processing:
Knead the flower parts, then the material is mixed with other ingredients such as honey and rock sugar, the material is used as a medicine to treat internal nerves/internal body infections/drink



Plant name: *kunyit kuning (Curcuma longa L.)*

Processing:
Boil the rhizome, then mix the ingredients from other plants, namely galangal, turmeric, lemongrass, ginger, and salam. The boiled water from the mixture of these ingredients is used as a medicine for malaria and treating fever after pregnant women give birth.

Grated part of the rhizome, filtered to separate the water / water is used as a medicine for stomach ache / drink



Plant name: *rumput belanda (Ageratum conyzoides L.)*

Processing:
Squeeze the leaves until they release water, then mix it with salt, the mixed water is used as a medicine for burns

Pounded the leaves, this collision is used to treat stomach ache / smeared



Plant name: *lengkuas (Alpinia galanga L.)*

Processing:
Pounded the stem, then squeezed until it releases water, the water is used as a cough medicine / smeared

Boil the rhizome and then mix the additional ingredients from turmeric, lemongrass, ginger, salam, the boiled water is used as a medicinal ingredient for the treatment of malaria.



Plant name: *cabe akar (Piper longum L.)*

Processing:
Grind the chili root, then add other plant ingredients such as cloves and pepper, then mix the other ingredients, duck eggs, a mixture of these ingredients as a remedy for runny semen.



Plant name: *pupuk jadi (Cyclea barbata Miers)*

Processing:
Knead the leaves then add the rice until it becomes gelatinous to overcome a hot stomach / Paste it in the stomach



Plant name: *sahang (Piper nigrum L.)*

Processing:
Grind the peppercorns, then mix the rhizome ingredients from other plants such as cloves, then mix it with duck eggs, these three ingredients then use the water as a medicine to treat runny semen.



Plant name: *belulok (Arenga pinnata Wurmb)*

Processing:
Take 7 pieces of sugar palm which is still easy then mix it with tamarind and brown sugar this mixture to treat shortness of breath/Eat it



Plant name: *jambu mentega (Persea americana Mill.)*

Processing:
Take part of the fruit / directly used to lower high blood pressure / eaten



Plant name: *macang (Mangifera foetida Lour.)*

Processing:
Grate the bark and then mix the other additional ingredients, namely salt, then wrap the mixture in a banana leaf, and bake it like memepes / Smeared on the teeth, the part that hurts



Plant name: *jamar tali (Acalypha hispida Burm .f.)*

Processing:

The leaves/roots are boiled, the boiled water is used as a medicine for itching/bathing

Squeezed the leaves, the water from the squeeze is used as medicine shortness of breath / smeared on the outer respiratory tract



Plant name: *cocor bebek/sedingen (Kalanchoe pinnata Lam.)*

Processing:

Finely chop the leaves, then mix them with additional ingredients from other plants, namely grass jelly leaves/finished fertilizer and rice, mix these ingredients until they become gelatinous.

The chopped leaves are used as medicine for malnourished babies



Plant name: *benonok (Amnona squamosa L.)*

Processing:

Boil the fruit leaves, the cooking water is used as an ulcer medicine / drink



Plant name: *padi (Oryza sativa L.)*

Processing:

Take rice and add water then, then soak for a while, the water is used as a medicine for worms / bathing



Plant name: *jambu lipo (Psidium guajava L.)*

Processing:

Boiled the leaves, this cooking water is used as a medicine for diarrhea / drinking



Plant name: *keladi (Colocasia esculenta L.)*

Processing:

The stems are boiled, the boiled stems are used as diabetes medicine / eaten



Plant name: *lamtoro (Leucaena leucocephala Lam.)*

Processing:

The fruit parts are roasted until they become powder, after which the powder is used in the form of drinks, such as coffee to treat kidney stones.

Take the fruit and can be used directly to treat worms / eaten

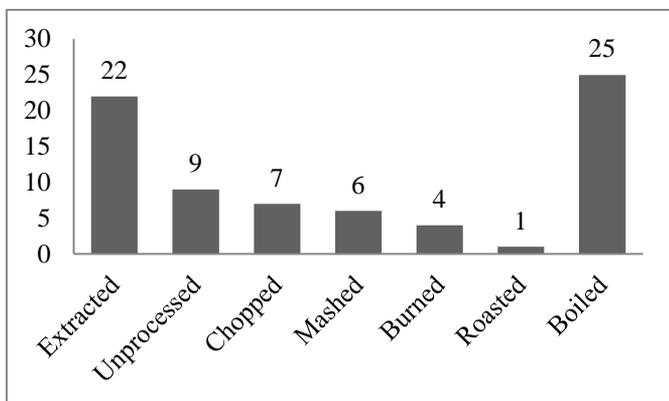


Figure 1. Processing of medicinal plants

Plants that are processed through the boiling process should not be carried out for too long, because it is suspected that this will reduce the efficacy of these plants. This is in line with research conducted by A'yunin et al. [39] also stated that boiling time affected the quality of the content and antioxidant activity. Sudjatini [40] also believes that processing has a significant effect on the water content and antioxidant properties of plant extracts.

According to *Battra's* statement, the method of processing by boiling is a method used to cure internal diseases that cannot be reached by the eye, such as diarrhea, diabetes, stroke and so on, while for treating external diseases the processing is usually done by squeezing such as ringworm and other types of itching. The same thing was also reported by other researchers such as [41] in Manua Sadap Village, Kapuas Hulu District, that the highest processing of plant species is by boiling. The processing method that is also often used by the community is by extracting it. Extracting is a way of processing/removing the water substance contained in plant parts. Plants whose parts are processed by extracting are carried out in several ways, namely grated (9 ways of processing), squeezed (4 ways of processing), and kneaded (9 ways of processing).

The people of the Lintang Tribe generally use plants singly, but also mix them with other ingredients. There are 48 ways to process plants with a single form (not mixed with other ingredients), while plants with a mixture of other ingredients have/16 ways of processing. Agree with [42] that people use one type of plant, two types, three types and more types in making traditional medicine (Figure 2).

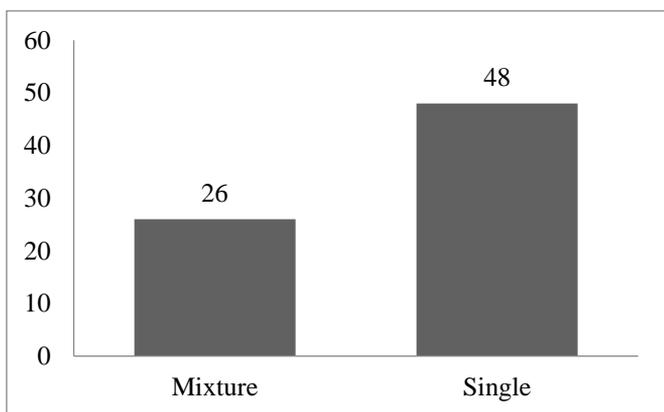


Figure 2. Forms of herbs

Single herb forms are used because they are easy to process, and are considered to have a large effect. This is supported by research conducted in the Lintang Tribe community in Rantau Kasai village who use more single herbs on the grounds that the processing process is easier, using a single herb will have a more pronounced effect. Types of plants that require mixed ingredients are divided into two, namely plants that require a mixture of several plants and plants that require other additional ingredients. Types of plants and the form of the material can be seen in Figure 3.



Figure 3. Ingredients and forms of medicinal plant ingredients that have been processed

Additional ingredients that are usually used by the community to treat diseases such as yeast, alcohol, honey, rice, tamarind, palm sugar, salt, and duck eggs. Plants that have been processed with the addition of other ingredients such *limau mipes* (*Citrus x aurantiifolia*) with the processing stage, namely squeezing until water is released, then mixed with mixed ingredients such as coconut oil, onion juice, and garlic juice and applied as a medicine to treat colds and stomach pain. The addition of these materials is believed to optimize their use [43].

The *limau mipes* (*Citrus x aurantiifolia*) in the world of medicine among the people of the Lintang Tribe in this village has become a common thing to use and can even be said to be a necessity when doing treatment. People who come to treat *Battra* will usually immediately bring part of the plant in the form of lime fruit to be used as an opening or as an initial medicine before starting treatment. Lime is believed to treat various disorders such as disturbance of spirits, colds, and stomach aches. The use of medicinal plants, among others, by eating, bathing, drinking, smearing, sprinkling, pasting, and rubbing. Plants that are used most often are by drinking, can be seen in Figure 4.

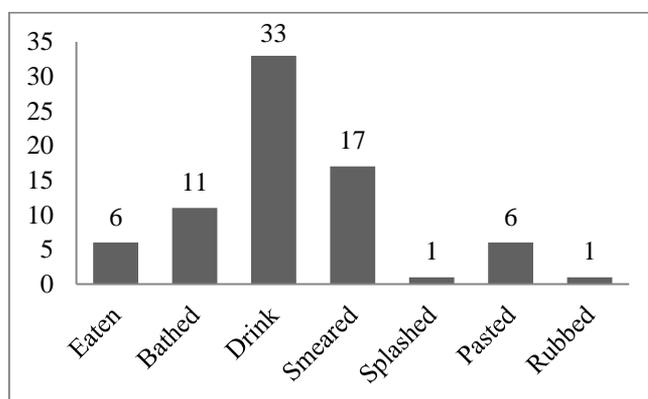


Figure 4. Use of plants as medicine

The use of plants as medicine by drinking makes it easier for people to treat, this is because the use of plants in this way is usually in the processing process can be done alone at home without the help of a *Battra*. How to use it by drinking is considered the most effective and quicker way to cause reactions, especially for diseases related to internal organs or to refresh the body. In line with research by Fauziah et al. [44] that the use of medicinal plant ingredients by drinking is considered the most effective way. The application of these concoctions is also adapted to the illnesses that people suffer, such as internal ailments which are generally used by drinking the concoctions, while for external ailments their use is usually by sticking, rubbing and smearing.

The use of plants in medicine, according to *Battra*, also has some restrictions for its users. Patients who are taking medication to deal with runny semen using *sahang* (*Piper nigrum*), *cabe akar* (*Piper longum*), and *cengkeh* (*Syzygium aromaticum*) abstain from eating all types of cabbage. The use of *pupuk jadi* (*Cyclea barbata*) and *cocor bebek* (*Kalanchoe pinnata*) for patients who have difficulty getting offspring is prohibited from eating and drinking all kinds of nuts. Apart from that, to treat shortness of breath by using the *aren* (*Arenga pinnata*), the patient abstains from eating puri beans and all kinds of foods with coconut milk. Treatment for children or infants who have intestinal worms is to abstain from eating all types of fish without scales, and all types of eggs. There are also some problems to deal with watery semen, it is forbidden to eat this type of cabbage. Patients who have problems drying their peranakan abstain from eating nuts and foods containing coconut milk. People who take medication to treat shortness of breath have taboos to eat jackfruit, papaya, and these patients are even forbidden to come to the place of the person who is dying. Abstinence in terms of food in traditional medicine according to *Battra's* statement is the same as in modern medicine, it's just that in traditional medicine medicinal ingredients come from plants which are believed to cure disease within a certain period of time.

The length of time it takes for treatment to heal is 1-3 days for mild treatment, while for severe treatment it takes 1-3 months according to the disease suffered by the community. This is in accordance with *Battra's* statement which says that: "Three days, for people who have difficulty with heredity, depending on the circumstances and conditions, it depends on the month and usually 1-3 months. If the treatment is not so severe or in mild conditions, only 3 days usually. This treatment can be done at any time, whether in the morning, afternoon, evening, or evening, but usually many people will come in the late afternoon or at night. This is because people believe that this time is a more efficacious time so that the treatment is more efficacious. Traditional medicine will be stopped when the patient recovers or when the patient is satisfied with the results he has obtained. This is in accordance with *Battra's* statement that: "For people who have difficult hereditary problems, usually when she is pregnant. After she became pregnant, the treatment was stopped, the patient only continued the treatment with herbs privately, such as using *cocor bebek*, closing for up to 3 months, if the disease was not so severe it was only 1-3 afternoons/day usually."

4. CONCLUSIONS

The parts of medicinal plants used by the community are roots, stems, fruit, flowers, leaves, shoots, rhizomes, sap, bark,

and fruit skin. how to process it, the form of herbal medicine, and the use of plants as medicine. Processing of plants is done in a simple way, namely consumed directly, chopped, grated, pounded, baked, stir-fried, squeezed, boiled, and kneaded. The most widely used processing is boiling as many as 15 ways of processing. On average, medicinal processing uses single plants, but some plants are also made like potions and mixed with other ingredients. Documentation of the processing of plants used as medicine by the community has made the local wisdom of medicinal plants by the Lintang Tribe sustainable from generation to generation, because so far it has not been well documented. Based on above, the managerial implications are the government needs to provide guidance on strategies for developing plants that have the potential to be used as medicine to increase people's income. Communities must work together with the government to carry out conservation efforts so that medicinal plants are not threatened with extinction by creating a special garden for family medicinal plants.

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