



ZINGIBERACEAE ETNOBOTANY AS A TRADITIONAL TREATMENT INGREDIENT FOR THE MANDAILING TRIBE IN VILLAGES AROUND THE BATANG GADIS NATIONAL PARK AREA, MANDAILING REGENCY NATAL

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ABS TRACK

This study aims to uncover and document belief systems, local knowledge systems, practice of using plants and culturally important values or ICS of plants of the Zingiberaceae family which are used as ingredients for traditional medicine by the Mandailing Tribe in villages around the Batang Gadis National Park area, Mandailing Natal Regency. The research location is in 2 villages around the Batang Gadis National Park, Mandailing Natal Regency. The research method is qualitative and quantitative. Data was collected through semi-structured interviews, participatory observation, documentation, *focus group discussions*, collection of plant samples and making herbarium. The results showed that there were 10 species of plants from the Zingiberaceae family used as traditional medicine by the Mandailing Tribe. The most widely used species is turmeric or *hunik* (*Curcuma domestica* Val.). Turmeric is believed to cure 8 kinds of diseases. The rhizome organ is the organ that is most widely used with a percentage of 75%. The practice of using plants by the Mandailing Tribe with the most processing method is boiling as many as 10 plant species with a percentage of 35.71% and the most using method by drinking as many as 10 plant species with a percentage of 62.5%. Plants with a very high category of cultural importance or ICS are found in turmeric or *hunik* (*Curcuma domestica* Val.) with an ICS value of 150, ginger or *pegeh* (*Zingiber officinale* Roscoe.) and red ginger or *pegeh narara* (*Zingiber officinale* var. *Rubrum*) with an ICS value of 120.

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Introduction

Indonesia is a tropical country with the second highest biodiversity in the world after Brazil. Indonesia's tropical forests, which consist of various types of ecosystems, are a repository of biodiversity for more than 239 food plant species and

more than 2,039 medicinal plant species (Nasution et al., 2018).

Plants are one of the most common natural ingredients used in traditional medicine. As traditional medicine, plants can have several active ingredients that produce a response so that they can be used

for the treatment of various diseases (Kholilah and Bayu, 2019). Indonesia is known as a source of raw materials for medicines that can be used to treat various diseases. One of the largest users of medicinal plants in the world is Indonesia (Yassir and Asnah, 2019).

Currently the use of natural materials tends to increase. Exploration related to knowledge of traditional medicine is often used as a starting point for the search for new drugs. With advances in technology, many species of medicinal plants have been processed and packaged in a modern way. The use of products resulting from the processing of modern medicinal plants then encourages a natural healthy lifestyle. The development of this natural medicine must receive greater attention not only due to its open development potential, but also the market demand for raw materials for these traditional medicines continues to increase to meet domestic and international needs (Yassir and Asnah, 2019).

Several species of medicinal plants come from the Zingiberaceae family. Indonesian people know Zingiberaceae as a ginger plant. This plant is widely used, among others, as cooking spices, flavoring, perfume ingredients, and ornamental plants. In addition, the Zingiberaceae plants are used for medicinal, food, beverage, and cooking ingredients (Mutaqin et al., 2017). Zingiberaceae can be used as medicine because it contains secondary metabolites, namely flavonoids and terpenoids which have antioxidant activity (Wandita & Musrifoh, 2018). The parts used as medicinal ingredients are mostly the rhizomes of the plant, while the methods of

treatment are various, including boiling or making herbal medicine and taking the water to drink, taking the juice by grating then drinking the water or applying it to the part of the body being treated, namely the part of the body being treated. stomach, forehead or other parts and some are eaten immediately (Washikah, 2016).

Indonesia is also known as a country that has many tribes. One of the ethnic groups in Indonesia is the Batak tribe which includes the Angkola Batak, Karo Batak, Mandailing Batak, Pakpak Dairi Batak, Simalungun Batak, Tapanuli Batak, Toba Batak and Dairi (Na'im and Syahputra, 2011). Every tribe in Indonesia has local knowledge in utilizing biodiversity including plants for various purposes including as a source of food, cosmetics, building materials, furniture, handicrafts and arts as well as for medicine.

One of the tribes in Indonesia that has a local knowledge system in utilizing plants as traditional medicine is the Mandailing Tribe. The Mandailing tribe has a unique and different knowledge from other local communities related to the use of plants as traditional medicine. These differences are especially evident in the selection of plant species and the processing of plant parts or organs to be used as medicine (Nasution et al., 2018).

Based on the description above, it is necessary to conduct research to reveal and document belief systems, local knowledge, and the practice of using plants of the Zingiberaceae family as ingredients of traditional medicine by the Mandailing Tribe for postnatal care so that they are not lost due to the influence of modernization through ethnobotanical research.

Mandailing Natal Regency. The research was carried out from December 2021 to March 2022.

Tools and materials

The tools used in this study were sound recording equipment, camera,

Materials and Methods

Research Location and Time

This research was conducted in villages around the TNBG area, namely Huta Padang Village and Huraba I Village,

scissors, plastic rope, plastic bags, hanging labels, newsprint, herbarium paper and stationery. The materials in this study were plant samples and 70% alcohol.

Data Collection and Data Analysis Techniques

Data collection in this study was carried out through semi-structured interviews, participatory observation, documentation, collection of plant samples and making herbarium.

1. The interview technique used is a semi-structured interview. The semi-structured interview aims to obtain information about the plant species of the Zingiberaceae family used as traditional medicine, the parts of the plants used, and the benefits of these plants.
2. The participatory observation method in this study aims to obtain information and a clear picture of the practice of using plants from the Zingiberaceae family as traditional medicine. Participatory observation is research observation in which the researcher is involved with the daily activities of the person being observed or used as a source of research data (Marhaeni, 2004).
3. The documentation technique aims to support and as a reminder that Zingiberaceae plants researched is correct and not wrong. Documentation systems use cameras to obtain photos and use voice recordings. This is done so that the data obtained is more accurate and can be justified.
4. *Focus Group Discussion* (FGD) is a technique of collecting data by conducting group meetings to discuss a specific topic (Alfiyati, 2008). In this study, FGD was carried out to obtain data on the *Index of Cultural Significance* (ICS) value of plants of the Zingiberaceae family. which is used

as a traditional medicine in the Mandailing Tribe.

5. If there is a plant species whose scientific name is not known, then a collection of plant samples is carried out then followed by making a herbarium. Herbarium aims to identify plant species that are matched with the identification key book entitled *Flora* by CGGJ Van Steenis (*Flora*), and the book *Flora of Java Vol. III* by CA Backer and RC Backhizen Van Den Brink.

Data on local community belief systems related to traditional medicine, local knowledge systems (local names, plant parts used), and data on the use of plants from the Zingiberaceae family as traditional medicines were analyzed through an emic approach using semi-structured interviews. The results of the emic data collection were then tabulated.

Quantitative data for each plant species was analyzed by calculating the percentage of plant organs/parts, how to process plants, how to use plants of the Zingiberaceae family that are used as traditional medicine using the formulas according to Hidayat (2009):

1. Percentage of Plant Organs

$$\frac{\sum \text{Certain plant organs}}{\sum \text{All organs from plants used}} \times 100\%$$

2. Percentage of Plant Processing

$$\frac{\sum \text{The method of processing plants used}}{\sum \text{All processing methods from plants used}} \times 100\%$$

3. Percentage How to Use Plants

$$\frac{\sum \text{How to use the plants used}}{\sum \text{The whole way of using the plants used}} \times 100\%$$

Quantitative data in the form of the importance of each plant used in postpartum care were analyzed using the *Cultural Significance Index* from Turner (1998) in Eni's research

(2019). The formula used is as follows:

$$ICS = \sum_{i=1}^n (q \times i \times e)$$

Information:

- q : value of quality (*quality*)
i : the value of the intensity of use (*intensity*)
e : value of exclusivity (*exclusivity*)

Results and Discussion

The Mandailing Tribe's Belief regarding Plants of the Zingiberacea Family as Traditional Medicines

Based on the results of interviews that have been carried out with resource persons in the Villages Around the Batang Gadis National Park Area, Mandailing Natal Regency, namely Huta Padang Village and Huraba I Village, the Mandailing Tribe has beliefs related to traditional medicine in addition to modern medicine. The Mandailing tribe does not give up traditional medicine methods, either by concocting their own medicine or by being treated by their grandparents.

The Mandailing tribe believes that the datuk is a person who is known and recognized by the local community. The healers are people who are able to take treatment actions in the context of public health services. Datuk are certain people who are believed to be able to cure a disease by means of a potion that has been prayed for. The Mandailing Tribe people believe that prayer on the ingredients of the potion can make the potion have a medicinal effect.

The Mandailing tribe also believes that plants from the Zingiberaceae family can be used as medicine to cure various diseases by the will of Allah SWT. This is because most of the people of the Mandailing Tribe in Huta Padang Village and Huraba I Village adhere to Islam so that the Mandailing Tribe is prohibited from believing in an object or potion to protect themselves from supernatural beings but believes that only Allah SWT can protect them.

The treatment carried out by the ancestor can be explained as follows. A

patient with a disease explains about the disease he is suffering from, then the datuk will tell what plants to look for to be processed into medicine and how to process and use them. Then the datuk will read a prayer when he wants to apply medicine to a patient with a disease. Some medicines do not use prayers or mantras. The prayers used in Arabic are Basmalah, Solawat, Al-Fatihah, Ayat Kursi, and long prayers.

The Mandailing Tribe community has a belief in the ability of the Datuk to cure various diseases. This is believed by the community because the datuk is someone who has an understanding of medicinal plants who are guided by the teachings of Islam. Datuk will give some questions to the patient then the father will give a prescription in the form of any plants that must be brought or processed according to the instructions of the father, then after the materials are collected and processed the Datuk will read prayers so that the herb is efficacious as a medicine that can cure the disease suffered patient. This is in line with the research by Aprioza & Albert (2015) which states that traditional medicine through the datuk uses "birth science" (external, technical or natural science) such as self-medication with herbs and massage, as well as traditional healers such as traditional birth attendants, shamans or artisans. massage. All of these specialists apply medical methods of a technical nature when carrying out treatment. Although prayers can be used or spells.

This is also in line with research by Nurmalinga, (2015) in Talang Durian Cacar Village, Rakit Kulim District, Indragiri Hulu Regency, Riau Province which states that a datuk is someone who has the ability to treat various diseases. The treatment

carried out by the datuk in treating patients is the *mementah treatment* which is carried out in two ways, namely first, prayer to Allah SWT, in Islam it can be in the form of prayer, the second is a mantra in the form of sentences to present or ask for help from ancestral spirits or spirits. The spell is closed so that only the datuk knows the sentences of the mantra. According to Rafles et al., (2016) the traditional medicine of the Talang Mamak Tribe in Sungai Pasir Putih Village, Kelayang District, Indragiri Hulu Regency believes that the datuk can cure diseases caused by hanus creatures and minor ailments. The method of treatment that will be carried out by the datuk can be divided into two, namely traditional medicine which is treated by means of rituals and traditional medicine by not using rituals. Traditional medicine with rituals is carried out to treat diseases caused by spirits, evil spirits and so on, while traditional medicine without rituals is treating minor ailments such as stomach pain, headache, fever and so on. However, some people also treat minor ailments with rituals, because their reason is that a relatively mild disease is not cured, so they try to cure the disease by means of rituals.

The Mandailing tribe has the main medicine or best known as "*nabau-bau*". If someone is sick, both adults and children are given *nabau-bau first*. *These odors* are believed to repel and keep away from disturbances of spirits. This is because, when someone is sick, it is easier to be disturbed by spirits or what is called *alak bunian*.

Besides being believed to be able to treat the sick, *nabau-bau* is also often used for pregnant women, mothers giving birth, and newborn babies. The Mandailing tribe considers that pregnant women, mothers giving birth and newborn babies have a sweet aroma from their bodies and are liked by spirits. *These odors* are believed to keep mothers and children away from the disturbance of spirits. The plants used are plants that have a distinctive smell, as the

name implies, *nabau-bau*, namely jeringau or *salimbatuk* (*Acorus calamus* L.), lempuyang or *lampyang* (*Zingiber zerumbet* (L.) Sm.), and bangle or *bungle* (*Zingiber cassumunar* Roxb. .)

This medicinal plant will be cut first and an odd number. The use of odd numbers is believed to be favored by Allah SWT so that it is used in the number of medicinal plants and then makes a rope of three colors, namely white, red and black or what is called *bonang banalu*. The white thread symbolizes the world above which is interpreted as a blessing in life that comes from the sky. The red thread symbolizes the middle world which is interpreted as air and blood, which means that if there is no air then we will not be able to live. The black thread symbolizes the underworld which is interpreted as the realm of death. Then the three threads are tied, then pieces of medicinal plants are inserted into a *bonang banalu* which is tied to the waist of a pregnant woman, while for babies it is enough to wrap it around the neck. Before being used, the datu must pray for it in its manufacture so that the drug works as an exorcist of spirits or avoids disturbance of spirits.

In traditional medicine there are numbers or amounts in taking materials, namely the use of materials must be odd. If there are a lot of plants, it is permissible to take 5, 7 or 9 only, if there are only a few, it is enough to take 3 or 1 only. This is in line with the research of Royyani et al., (2018) which states that local people who inhabit Enggano Island also have rules in taking plants for ingredients for traditional medicine. The process of taking plants must take into account the conditions of the plants and the time and day that are taken into account. The number of leaves or plant parts used must be odd, because odd is a number favored by God.

This traditional medicine has been passed on from the previous generation and then passed down orally from one generation to the next. This is in line with

the research of Nasution et al. (2020) which states that the Toba Batak tribe in Humbang Hasundutan Regency has knowledge about the use of plants from the Zingiberaceae family which have great potential as medicine so that this knowledge is still firmly held as an ancestral tradition, both passed down orally and in writing. The Mandailing tribe views traditional medicinal plants as important because they are believed to be able to prevent and treat disease, the prices are relatively cheap and even free because they are obtained from nature, and have minimal side effects compared to modern medicines. In addition, some diseases are believed to be incurable

with medical drugs, including diseases caused by spirits.

Local Knowledge of the Mandailing Tribe Regarding Plants of the Zingiberaceae Family as Traditional Medicines

Based on the results of interviews with informants in villages around the TNBG area, there are 10 plant species of the Zingiberaceae family used as traditional medicine. The plant species used as traditional medicine for the Mandailing Tribe can be seen in the following table:

Table 1. Data Tabulation of Zingiberaceae Family Plant Species Used as Traditional Medicine

No.	Plant Name			Genus	Parts Used
	Scientific name	Local Name	Indonesian name		
1	<i>Alpinia galanga</i> (L.) Willd.	<i>pedestal</i>	Galangal	Alpinia	Leaves and Rhizomes
2	<i>Amomum compactum</i> Sol. Ex Maton.	<i>Palaga</i>	Cardamom	Amomum	Fruit
3	<i>Curcuma domestica</i> Val.	<i>Unique</i>	Turmeric	Curcuma	Leaves and Rhizomes
4	<i>Curcuma zanthorrhiza</i> Roxb.	<i>Curcuma</i>	Curcuma	Curcuma	rhizome
5	<i>Curcuma heyneana</i> Valetton & Zijp.	<i>Tindosan</i>	Sleigh Meeting	Curcuma	rhizome
6	<i>Kaempferia galanga</i> L.	<i>Incor</i>	Aromatic ginger	Kaempferia	rhizome
7	<i>Zingiber officinale</i> var. <i>rubrum</i>	<i>Pegeh narara</i>	Red ginger	Zingiber	rhizome
8	<i>Zingiber officinale</i> Roscoe.	<i>Pegeh</i>	Ginger	Zingiber	rhizome
9	<i>Zingiber cassumunar</i> Roxb.	<i>Bungle</i>	bangle	Zingiber	rhizome
10	<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm	<i>the lamp</i>	Lempuyang	Zingiber	rhizome

The Mandailing people take advantage of 3 plant parts/organs of the Zingiberaceae family, namely fruit, leaves,

and rhizomes for traditional medicine. The graph of the number of plant species based on the part used is presented in Figure 1.

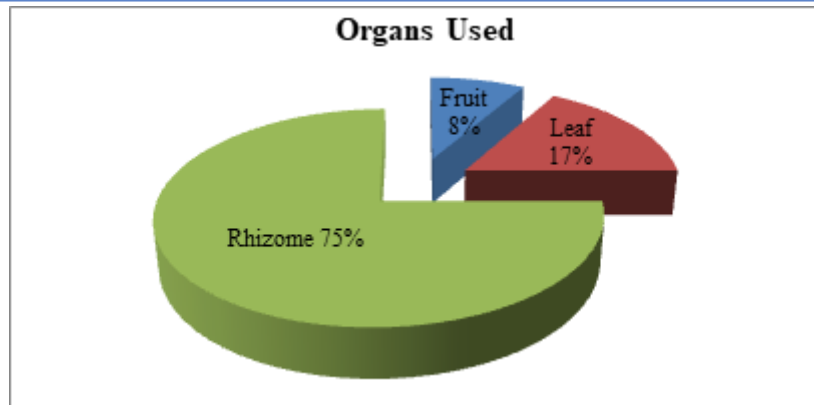


Figure 1. Diagram of plant parts/organs of the Zingiberaceae family used as traditional medicine

Based on Figure 1. Plant organs used by the Mandailing Tribe community in the village around the TNBG area, namely plant organs used as traditional medicine are rhizome organs of 75% of the total plant organs used, while the smallest part is fruit organs, which is 8.33%. Rhizome or rhizome is the organ that is most widely used in the Zingiberaceae family as an

ingredient in traditional medicine. This is in line with the research of Laili et al., (2022) . which states that the Sasak people also use the rhizome of the Zingiberaceae family plant as a traditional medicine which is believed to be an antiviral which is mixed by boiling and using it by drinking which they believe can avoid the virus. which is currently happening in Indonesia.

The Most Widely Used Plant Species of the Zingiberaceae Family

Based on the results of interviews with informants, there are 10 species of

plants from the Zingiberaceae family that are used as traditional medicines. The graph of the most widely used plant species of the Zingiberaceae family as traditional medicine can be seen in Figure 2.

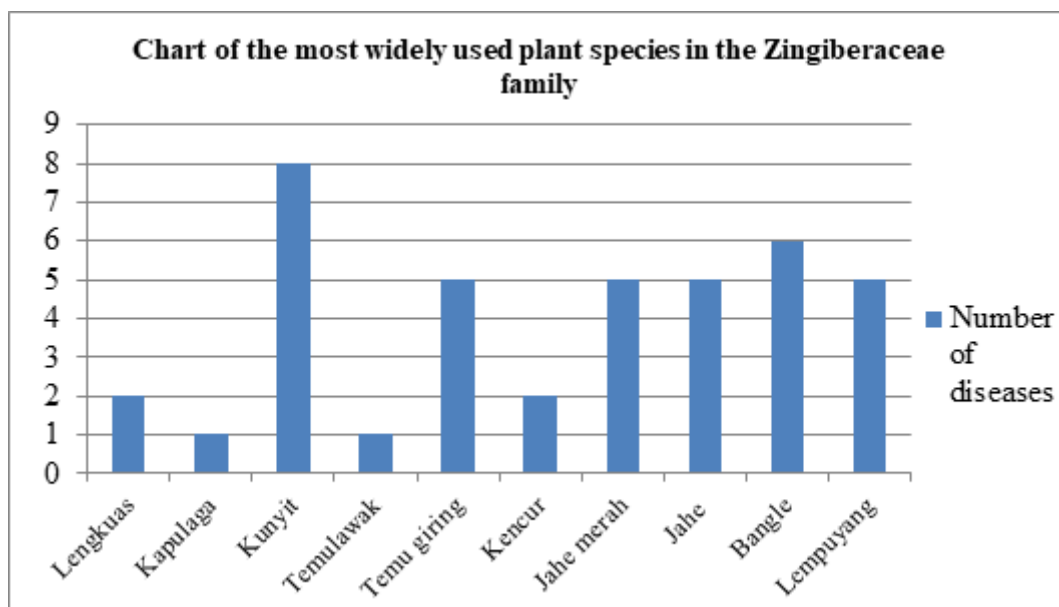


Figure 2. The most widely used plant species in the Zingiberaceae family

Based on Figure 2. the plant species from the Zingiberaceae family that are most widely used as traditional medicine by the Mandailing Tribe in Huta Padang Village and Huraba I Village are turmeric or *hunik* (*Curcuma domestica* Val.). This is in line with the research of Auliani et al., (2018) which states that the people in Siak Hulu District, Kampar Regency, turmeric (*Curcuma domestica* Val.) by the community in Siak Hulu District.

The Practice of Using Plants of the Zingiberaceae Family as Traditional Medicines

The Mandailing tribe utilizes Zingiberaceae family plants as traditional medicine in various ways. The method of processing and use is carried out in accordance with the advice and instructions of the ancestor. The practice of using medicinal plants by the Mandailing Tribe is summarized in the following table.

Table 2. How to Utilize and Use Plants by the Mandailing Tribe

No.	Disease Name	Plants Used	How to Use	How to use
1	Body aches (<i>body slim</i>)	Temulawak (<i>Curcuma zanthorrhiza</i> Roxb), bangle or <i>bungle</i> (<i>Zingiber cassumunar</i> Roxb.) , lempuyang or <i>Lampuyang</i> (<i>Zingiber zerumbat</i> (L.) Roscoe ex Sm), temu giring or <i>tindosan</i> (<i>Curcuma heyneana</i> Valetton & Zijp.)	The rhizome of the ingredients used is grated and then the grated results are filtered	The filter results are drunk every morning and night before going to bed.
2	Cough	Red ginger or <i>pegeh narara</i> (<i>Zingiber officinale</i> var. Rubrum.) ginger or <i>pegeh</i> (<i>Zingiber officinale</i> Roscoe.), Galangal or <i>pedestal</i> (<i>Alpinia galanga</i> (L.) Willd	The rhizome is cut into odd numbered pieces, put three cups of water in a pot then add the pieces of material then boil until boiling.	Wait until the boiled water is warm and then drink it every morning and night before going to bed.
		Kencur or <i>asior</i> (<i>Kaempferia galanga</i> L.), red ginger or <i>pegeh narara</i> (<i>Zingiber officinale</i> var. Rubrum) , ginger or <i>pegeh</i> (<i>Zingiber officinale</i> Roscoe.)	The rhizome is cut to the size of 1 finger segment.	Pieces of rhizome sucked like candy.

		Cardamom or <i>palaga</i> (<i>Amomum compactum</i> Sol. Ex Maton)	An odd number of cardamom fruit is boiled until it boils and has a strong aroma.	Wait until the boiled water is warm and then drink it every morning and night before going to bed.
3	Fever in pregnant women (<i>breakfast</i>)	Turmeric or <i>hunik</i> (<i>Curcuma domestica</i> Val.), bangle or <i>bungle</i> (<i>Zingiber cassumunar</i> Roxb.) , temu giring or <i>tindosan</i> (<i>Curcuma heyneana</i> Valetton & Zijp.), lempuyang or <i>Lampuyang</i> (<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm), jeringau or salimbatuk (<i>Acorus calamus</i>), cloves or cloves (<i>Syzygium aromaticum</i> (L) Merr. & LM, Perry), patchouli leaves (<i>Pogostemon cablin</i>), tindo tasik (<i>Clerodendrum serratum</i> L.)	The turmeric rhizome, bangle, temu giring and the ingredients used, are cut into pieces and then dried in the sun to dry then mashed by grinding until smooth, then praying.	Apply all over the body by giving a little water, every morning and night before going to bed.
4	Fever in babies (<i>sweet</i>)	Kencur or <i>asior</i> (<i>Kaempferia galanga</i> L.), seleguti flower or <i>sibaguri</i> (<i>Sida rhombifolia</i>) , pulutan or <i>sampilulut</i> flowers (<i>Urena lobata</i> L.)	The rhizome of kencur and the ingredients used are cut and then ground by grinding until smooth and then praying.	Apply all over the body by giving a little water, every morning and night before going to bed.
5	Indigestion	Turmeric or <i>hunik</i> (<i>Curcuma domestica</i> Val.)	Cut the turmeric rhizome into odd-numbered pieces, put three cups of water in a pot then add the turmeric pieces and boil until boiling.	Wait until the boiled water is warm and then drink it every morning and night before going to bed.
6	Malaria (<i>shampoo</i>)	Turmeric leaves or <i>hunik</i> (<i>Curcuma domestica</i> Val.) , galangal leaves or <i>Bulung alas</i> (<i>Alpinia galanga</i> (L.) Willd) , banana leaf or banana leaf (<i>Musa sp</i>).	The leaves of the ingredients used are boiled until boiling then the boiled water is prayed after that is bathed all over the body.	Boiled water bathed every morning and night before going to bed.

7	Enter angina	Turmeric or <i>unique</i> (<i>Curcuma domestica</i> Val.), shallot (<i>Allium cepa</i> L.), palm sugar or <i>bargot gulo</i> (<i>Arenga pinnata</i> (Wurmb). Merr	The turmeric rhizome and the ingredients used are grated and then filtered to produce a water extract from the ingredients.	Extracts from these ingredients are taken every morning and night before going to bed.
8	Appetite enhancer	Red ginger or <i>pegeh narara</i> (<i>Zingiber officinale</i> var. <i>Rubrum</i>), ginger or <i>pegeh</i> (<i>Zingiber officinale</i> Roscoe.), turmeric or <i>hunik</i> (<i>Curcuma domestica</i> Val.), bangle or <i>bungle</i> (<i>Zingiber cassumunar</i> Roxb.), lempuyang or <i>Lampuyang</i> (<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm), lemongrass or <i>cheep</i> (<i>Cymbopogon nardus</i> (L) Rendle), palm sugar or <i>gulo bargot</i> (<i>Arenga pinnata</i> (Wurmb). Merr	Red ginger rhizome or ginger, turmeric, bangle, lempuyang and the ingredients used are cut, then boiled until boiling.	Wait until the boiled water is warm and then drink it every morning and night before going to bed.
9	Body warmer for babies (<i>disappeared</i>)	Kencur or <i>asior</i> (<i>Kaempferia galanga</i> L.), padi or <i>dahanon rice</i> (<i>Oryza sativa</i> L.), candlenut (<i>Aleurites mauccana</i>), patchouli leaf (<i>Pogostem cablin</i>).	The rhizome of kencur and the ingredients used are ground until smooth and then the results of the mill are prayed for	Pasted on the crown of the head and forehead every morning after bathing
10	Pilulus (<i>snout</i>)	Turmeric or <i>hunik</i> (<i>Curcuma domestica</i> Val.), lime or <i>tungkek asom</i> (<i>Citrus aurantifolia</i>).	The turmeric rhizome and other ingredients used are grated, then squeezed and filtered	The filter results are drunk every morning and night before going to bed
11	Rheumatism	Kencur or <i>asior</i> (<i>Kaempferia galangal</i>), red ginger or <i>pegeh</i>	Rhizome kencur, red ginger or ginger, and the ingredients are	Smear on the painful area, applied every

		<i>narara</i> (<i>Zingiber officinale</i> var. <i>Rubrum</i>), ginger or <i>pegeh</i> (<i>Zingiber officinale</i> Roscoe.) , garlic (<i>Allium sativum</i>), coriander (<i>Coriandrum sativum</i>).	ground until smooth, then filtered and then add massage oil.	morning and night before going to bed.
12	Stomach ache	Red ginger or <i>sipode narara</i> (<i>Zingiber officinale</i> var. <i>Rubrum</i>), ginger or <i>pegeh</i> (<i>Zingiber officinale</i> Roscoe.) , cloves or cloves (<i>Syzygium aromaticum</i> (L) Merr. & LM, Perry), betel leaf or <i>burangir</i> (<i>Piper betle</i> L).	Red ginger rhizome or ginger and other ingredients used are cut and then boiled until boiling.	Wait until the boiled water is warm and then drink it every morning and night before going to bed.
13	stroke	Turmeric or <i>hunik</i> (<i>Curcuma domestica</i> Val.), taro (<i>Colocasia esculenta</i>), black pepper (<i>Piper nigrum</i>).	The turmeric rhizome and the ingredients used are grated to remove the water then added a little massage oil.	Apply all over the body every morning and night before going to bed.
14	Trance	Turmeric or <i>hunik</i> (<i>Curcuma domestica</i> Val.), lempuyang or <i>lampyang</i> (<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm), bangle or <i>bungle</i> (<i>Zingiber cassumunar</i> Roxb.) , temu giring or <i>tindosan</i> (<i>Curcuma heyneana</i> Valetton & Zijp.), jeringau or <i>salimbatuk</i> (<i>Acorus calamus</i>).	The rhizome of turmeric, lempuyang, temu giring and other ingredients used are grated and then the grated result is prayed for.	Smeared on narrow areas of the body such as armpits, groin, elbows, every morning and night before going to bed.
15	witchcraft (<i>ono gadam</i>)	Bangle or <i>bungle</i> (<i>Zingiber cassumunar</i> Roxb.), lempuyang or <i>Lampuyang</i> (<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm), temu giring or <i>tindosan</i> (<i>Curcuma</i>	The bangle rhizome, lempuyang temu giring and other ingredients used are grated and then the grated result is prayed for.	Apply to narrow areas of the body such as armpits, groin, elbows, every morning and night before going to bed

		<i>heyneana</i> Valetton & Zijp.) , jeringau or salimbatuk (<i>Acorus calamus</i>).		
16	Reprimand the devil (<i>tarsapo</i>)	Bangle or <i>bungle</i> (<i>Zingiber cassumunar</i> Roxb.), lempuyang or <i>Lampuyang</i> (<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm), temu giring or <i>tindosan</i> (<i>Curcuma heyneana</i> Valetton & Zijp.) , jeringau or salimbatuk (<i>Acorus calamus</i>).	The rhizome of the materials used is cut 3, 5 or 7 parts and then made into a necklace and then prayed for.	Draped around the waist during pregnancy.

Classification of Plant Species Based on Processing Method

The Mandailing people take advantage of the method of processing plants of the Zingiberaceae family as

traditional medicine by boiling, grinding, grating, and cutting . The graph of the number of plant species based on the method of processing the plant is presented in Figure 2.

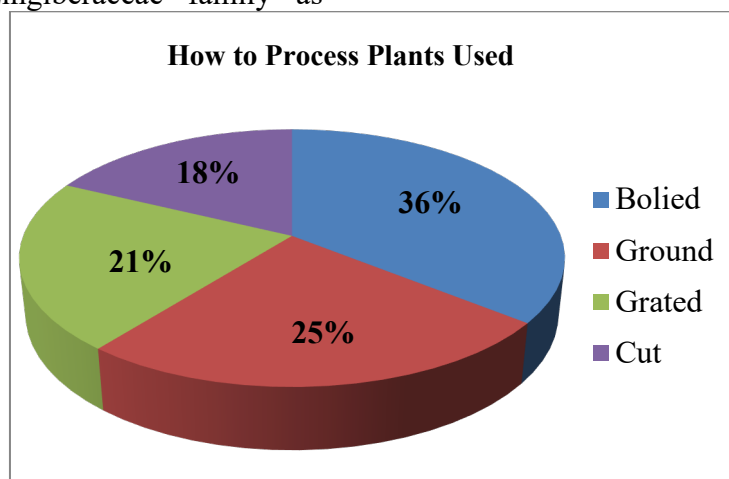


Figure 3. How to Process Plants of the Zingiberaceae Family as Traditional Medicines

Based on Figure 3. the method of processing plants as traditional medicine by the Mandailing Tribe in the village around the TNBG area, namely, the most common method of processing is boiling. as many as 10 species by 35.71% . How to use plants as

traditional medicine by the Mandailing community in villages around the TNBG area, namely in Huta Padang Village and Huraba I Village. The most widely used processing method is boiling. This method is usually used when the method of use is

drunk. This is in line with the research of Mutaqin et al., (2017) which states that the people around the Rancabuaya Beach Tourism area, Caringin District, Garut Regency process plants from the Zingiberaceae family into traditional medicine by means of boiling, making herbal medicine and taking the water to drink. According to Syah et al., (2014) the boiling process can remove substances contained in plants compared to boiling.

Classification of Plant Species Based on How to Use

The Mandailing people take advantage of how to use plants of the Zingiberaceae family as traditional medicine by sticking, bathing, smoking, draping, smearing, and drinking . The graph of the number of plant species based on how they are used is presented in Figure 3.

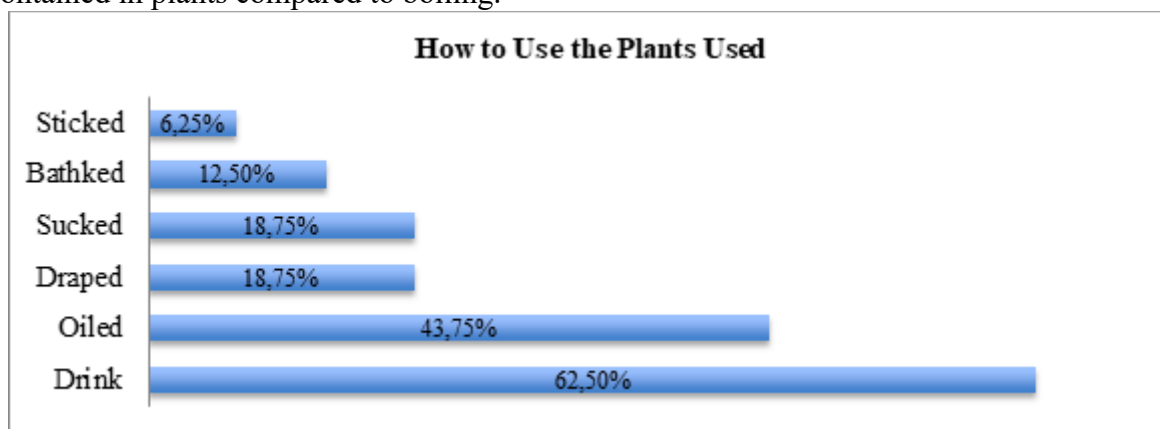


Figure 4. How to Use Zingiberaceae Plants as Traditional Medicine

Based on Figure 4. the method of using plants as traditional medicine by the Mandailing Tribe in the village around the TNBG area, namely, the most widely used method is by drinking as many as 10 species by 62.5% . How to use traditional medicine by the Mandailing Tribe in villages around the TNBG area, namely in Huta Padang Village and Huraba I Village, is by drinking, smearing, forming into a necklace or tied around the waist, bathed, taped. The way to use traditional medicine that is mostly used by the Mandailing Tribe is by drinking it. This is in line with the research of Leksikowati et al., (2020) which states that the local people of the Lampung Tribe in West Lampung Regency use medicinal

plants by drinking, which is a type of consuming concoctions in the form of liquids from boiling or how to use medicinal plants by drinking from common ingredients. prepared by cutting into pieces and then boiling.

The Importance of Plant Culture of the Zingiberacea Family as Traditional Medicines

Through the calculation of the ICS (*Index of Cultural Sinificance*) the cultural importance of each plant species used by the Mandailing people in the villages around the TNBG area as traditional medicine is as follows:

Table 3. Value of Cultural Significance Index (ICS) of plants used as ingredients in traditional medicine

No	Plant Name			ICS Nilai value	Total
	Scientific name	Local Name	Indonesian name		
1	<i>Alpinia galanga</i> (L.) Willd.	pedestal	Galangal	(5x2x1) + (4x2x1)	18
2	<i>Amomum compactum</i> Sol. Ex Maton	Palaga	Cardamom	(5x1x0,5) + (3x1x0,5)	4
3	<i>Curcuma domestica</i> Val.	Hunik	Turmeric	(5x5x2) + (4x5x2) + (3x5x2) + (2x5x2) + (1x5x2)	150
4	<i>Curcuma zanthorrhiza</i> Roxb.	Curcuma	Curcuma	(5x4x1) + (2x4x1)	28
5	<i>Curcuma heyneana</i> Valeton & Zijp.	Tindosan	sleigh meeting	(5x3x1) + (4x3x1)	27
6	<i>Kaempferia galanga</i> L.	Incor	Aromatic ginger	(5x3x1) + (4x3x1) + (3x3x1)	36
7	<i>Zingiber officinale</i> Roscoe	Pegeh	Ginger	(5x4x2) + (4x4x2) + (3x4x2) + (2x4x2) + (1x4x2)	120
8	<i>Zingiber officinale</i> var. rubrum	Pegeh Narara	Red ginger	(5x4x2) + (4x4x2) + (3x4x2) + (2x4x2) + (1x4x2)	120
9	<i>Zingiber cassumunar</i> Roxb.	Bungle	bangle	(5x4x1) + (4x4x1) + (2x4x1)	44
10	<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm	the lamp	Lempuyang	(5x3x1) + (4x3x1)	27

Based on Table 3. above, the *Index Cultural Significance* (ICS) values in Huta Padang Village and Huraba I Village can be

categorized as high, medium and low plant species as follows:

Table 4. Category Value Index of Cultural Significance (ICS)

No	Category	Score	Plant Species
1	Very high	> 100	<ul style="list-style-type: none"> • Hunik (<i>Curcuma domestica</i> Val.) • Pegeh (<i>Zingiber officinale</i> var. Rubrum) • Pegeh (<i>Zingiber officinale</i> var. Rubrum)
2	Tall	50 – 99	<ul style="list-style-type: none"> • Temulawak (<i>Curcuma xanthorrhiza</i> Roxb.) • Tindosan (<i>Curcuma heyneana</i> Val.) • Bungle (<i>Zingiber cassumunar</i> Roxb.) • Incor (<i>Kaempferia galangal</i> L.) • Lampuyang (<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm)
3	Currently	20 – 49	Alas (<i>Alpinia galanga</i> (L.) Willd.
4	Low	5 – 19	-

5	Very low	1 -2	Palaga (<i>Amomum compactum</i> Sol. Ex Maton)
6	There isn't any	0	-

Based on table 4. there are 10 plant species of the Zingiberaceae family that have different ICS values. The ICS values of plants used as ingredients for traditional medicine by the Mandailing Tribe are categorized as very high, high, medium and low. This is because there are some plants that cannot be replaced with other plants or are very popular in traditional medicine, and there are also some plants that can be replaced with other plants, and plants that are rarely used as ingredients for traditional medicine.

Plant species in traditional medicine that have a very high ICS category according to the Mandailing Tribe in Huta Padang Village and Huraba I Village are turmeric or *hunik* (*Curcuma domestica* Val.), ginger or *pegeh* (*Zingiber officinale* Roscoe.) , red ginger or *pegeh narara* (*Zingiber officinale* var. *Rubrum*). Plants in traditional medicine that have a very high ICS value means that these plants have many benefits in curing various diseases, the intensity of which is often used, and is very popular. Plants that have a high ICS value are temulawak (*Curcuma xanthorrhiza* Roxb), temu giring or *tindosan* (*Curcuma heyneana* Valetton & Zijp.), bangle or *bungle* (*Zingiber cassumunar* Roxb.), kencur or *incor* (*Kaempferia galanga* L.), lempuyang or *Lampuyang* (*Zingiber zerumbet* (L.) Roscoe ex Sm) . Plants have a high ICS value, meaning that the plant has a high intensity value or is preferred. Then plants that have a moderate ICS value are galangal or *base* (*Alpinia galanga* (L.) Willd). This is in line with the research of Laili et al., (2022) which stated that in Tiremenggal Village, Gresik Regency , red ginger or *pegeh narara* (*Zingiber officinale* var. *Rubrum*) has the efficacy of ginger plants which have the potential to cure diseases

that are often experienced by the community. Not only in terms of treatment but also used as a kitchen spice so that the plant is always available in every home.

Plants that have a moderate ICS category mean that the plant has a moderate exclusivity value or can be replaced with other plants in traditional medicine. Then the plant that has a very low ICS value is cardamom or *palaga* (*Amomum compactum* Sol. Ex Maton). Plants that have a low ICS value means that the plant has a low ICS value, meaning that it is rarely used in traditional medicine.

Each tribe has a level of knowledge in community groups in the use and processing of plants. This is influenced by cultural values or the *Index Of Cultural Significance* (ICS) and differences in environmental conditions. This also affects differences in plant ICS values in various tribes for the same plant species of the Zingiberaceae family because they have different benefits, intensity and exclusivity.

Conclusion

The belief system (*cosmos*) of the Mandailing tribe in villages around the GNP area regarding the use of plants of the zingiberaceae family as ingredients for traditional medicine is that the Mandailings believe that plants of the zingiberaceae family can be used as medicine to cure various diseases by the will of Allah SWT. With the help of a progenitor, the plants of the Zingiberaceae family will be mixed and then prayed for to have a medicinal effect. In addition, the Mandailing tribe believes that disease is not only caused by fatigue and damage to certain organs but there are also diseases caused by spirits " *alak bunian* ". Plants of the Zingiberacea family that are trusted by the community as medicine to avoid disturbance of spirits are Lampuyang

(*Zingiber zerumbet* (L.) Sm.), and Bungle (*Zingiber cassumunar* Roxb.), Temu giring or *tindosan* (*Curcuma heyneana* Valetton & Zijp.) or called also with the term " *Nabau-bau* ". The plant is believed by the Mandailing people as a plant with a distinctive smell which is believed to be disliked by spirits. The knowledge system (*corpus*) of the Mandailing tribe in villages around the TNBG area regarding the use of plants of the Zingiberaceae family as ingredients for traditional medicine is as many as 10 species of plants are used to treat diseases, the most used species are turmeric or *hunik* (*Curcuma domestica* Val.) , the percentage of organs most widely used is rhizome or rhizome with a percentage of 75%. turmeric or *hunik* (*Curcuma domestica* Val.) can treat fever in pregnant women (*sarapa-sarapa*), ulcers, malaria (*sampuon*), colds, appetite enhancer, pilulun (*monjong*), and trance. The practice (*praxis*) of using plants by the Mandailing Tribe in villages around the TNBG area is related to the use of plants of the Zingiberaceae family as ingredients for traditional medicine, namely the most processing method is by boiling as many as

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