



Inventory of Medicinal Plants for Pregnant and Postpartum Women in *Dayak Tomun* of The Lopus Village Lamandau Regency of Central Kalimantan

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Abstract

Dayak Tomun is a traditional society living in the Lamandau Regency of Central Borneo. The Dayak society Tomun has local wisdom in the treatment and care of pregnant women and the birthing process utilizes medicinal plants. The traditional medicines were passed down from the ancestors of the Dayak. The purpose of the research was to discover, assess, and inventory medicinal plant used in the treatment and care of pregnant and postpartum women by the *Dayak Tomun*. The method used was a semi-structured interview and direct participatory observation of six key informants professional activities in the treatment of *Dayak Tomun* in the Lopus Villages. As many as 17 species of medicinal plants with 14 families. Found of these 23.53% were of member of the family Zingiberaceae. Traditional herbal treatment of pregnant and postpartum by *Dayak Tomun* societies many are formulated by using part of the leaves (52%), boiled (37.50%) and consumed with a drink (28%). Treatment and care of pregnant and postpartum women in *Dayak Tomun* should be applied and preserved so that local knowledge of *Dayak Tomun* society in the Lopus Villages is not lost to the next generation. The research provided information to the society about the utilization of plants used in treatment for women.

How to Cite

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INTRODUCTION

Central Kalimantan has a vast forest area biodiversity, and there is great support for local knowledge from traditional societies especially that for the Dayak (Suryadarma, 2005). Traditional knowledge in the society in Central Kalimantan on the utilization of plants was inherited from a long line of ancestors. Such knowledge is usually applied in day-to-day life. The utilization of different types of plants by traditional societies is associated with the location of the society. The diversity of plant species which are exploited will thrive because of the experience, skills and local knowledge of traditional society.

One of the indigenous societies with knowledge of medicinal uses of plants in the *Dayak Tomun* society. *Dayak Tomun* is a traditional society that resides in the Lamandau District of Central Kalimantan. *Dayak Tomun* has characteristically lived in the area near river and forests, so it can be said that they live with dependence on nature due to their ancestral beliefs that everything in life comes from nature. *Dayak Tomun* in the Lamandau always gives thanks to the natural forest environment, because gives them an element of life and peace (Dey & Djumaty, 2017). *Dayak Tomun* is alive with culture and a unique empirical way of thinking, they believe the spirits of the ancestors and the Gods of their beliefs are in the forest area living among the society.

The *Dayak Tomun* in the Lamandau is particularly knowledgeable about the utilization of medicinal plants from the forest area where they reside. *Dayak Tomun* believes good disease if exposed to a disease or medical ward, therefore treatment is administered by making a concoction of medicinal plants originating from the forests around them. In this society, people believe that the origin of the disease is the spirits of ancestors who formerly inhabited the forest. The utilization of plants in the traditional surroundings of the society is essential achieving balance and managing the ecosystems that support their lives. Such knowledge is known as ethnobotany, traditional societies with the environment include the utilization of plants not only for economic activities and traditions but also to traditional treatment (Kandari *et al.*, 2012; Scantlebury *et al.*, 2013; Albauquerque *et al.*, 2006).

One of the unique treatment traditions in Dayak Tomun society is the treatment of pregnant and postpartum women. Pregnant and postpartum women of *Dayak Tomun* recommended not to do any of several prohibited things. One of them is eating spicy, sour, meat, blackened

chicken or fish. They also should not bath in rivers. In addition, the traditional society believes in applying such restrictions during pregnancy believe to protect the health of babies and pregnant women. Traditionally during the process of pregnancy and post-birth, societies use many herbal medicinal plants that are certain to strengthen the health of the baby and uterus (Ahmed *et al.*, 2018).

Knowledge of treatment and pregnant and nursing mothers after childbirth in traditional societies in the category experienced disease during pregnancy and post-delivery, types of medicinal plants used, and preparation and consumption the spices. These differences are the hallmark of local wisdom of traditional society, which should be maintained and applied, therefore a study on the utilization of medicinal plants used by the *Dayak Tomun* society primarily in the Lopus Village of Lamandau Regency Central Kalimantan is the most important. Yet the existence of the study of the utilization of medicinal plants used by Dayak Tomun in traditional treatment makes the reason he had to do deeper studies. Future study is useful to open a discourse *Dayak Tomun* society of local wisdom about traditional medicine. This study will provide database information and local knowledge of traditional Dayak societies, particularly in Central Kalimantan and widely.

METHODS

Study Area

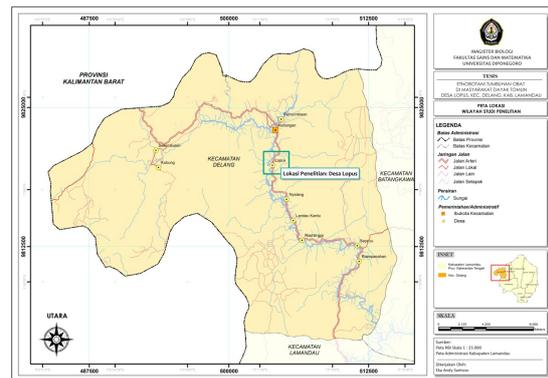


Figure 1. Research Location in the village of Lopus Lamandau Regency of Central Kalimantan

The study of the Dayak Tomun society was conducted in Lopus Villages, Delang, Lamandau Regency, Central Kalimantan, Indonesia from January to March 2018. The research location is at latitude $1^{\circ}37'56.90''\text{S}$ and longitude

111°2'24.29"E with an altitude of between 150 and 250 meters above sea level and a mean temperature of 28.5 ° C (Figure 1). Vegetation location consisted of a characterization of the indigenous grasses, shrubs, and trees.

Ethnobotanical Data Analysis

The research method employed was the semi-structured interview and participatory exploration with 6 key informant's profession as a customary (*mantir adat*), shaman (*poalap*) and midwife (*moalap*). The method of semi-structured interviews was conducted with key informant interviewees selection or purposive sampling including the customs and character of a shaman. Interviews were conducted by providing questions on knowledge of the utilization of medicinal plants of *Dayak Tomun*, the diversity of medicinal plants (local name), part of the plant used as a medicinal herb, preparation of medicinal herb, and the presentation of the medicinal herb used in the treatment and care of pregnant women.

A method of participatory exploration that accompanied the key informant, the data obtained from the results of the interview. This exploration aims to take, an inventory of the plant species and medications used by shaman in the traditional treatment of pregnant women and childbirth. The results of the data acquired will be published by using the key to identify the determination. The entire results are presented in tabulated and the analysis is descriptive.

RESULTS AND DISCUSSION

Diversity in Medicinal Plants Type

Types of medicinal plants used in the treatment and care of pregnant and postpartum women by the Dayak Tomun. As many as 17 kinds of medicinal plants comprising 14 families were found (Figure 2.). The family that was most widely used in the treatment and care of pregnant and postpartum women by the Dayak Tomun in the Lopus Villages was Zingiberaceae, which comprised 23.53 % of all plants used. Plants that fall into this category include cokur/ kencur (*Kaempferia galanga* L.), jahe (*Zingiber officinale* Rosc.), kayu panas/ lengkuas (*Alpinia galanga* (L.) Wild.), and tetabai/ pacing (*Costus speciosus* J. Koenig BC.). On the plant *Kaempferia galanga* L., *Zingiber officinale* Rosc. and *Acorus calamus* L. of family Zingiberacea in local society in Pangea, District of Kuantan Senggigi Riau according to Hartanto *et al.*, (2014), used in the treatment of pregnancy and postpartum women. Plants of this family are found in yards around houses in the Lopus Villa-

ge of *Dayak Tomun* society.

The plant of the family Zingiberaceae is frequently cultivated by people in Central Kalimantan in the courtyards of the houses (Chotimah *et al.*, 2013). The family Zingiberaceae was Ginger Group of plants known as ginger which has herbaceous characteristics, there is the rhizome that is under the surface of the soil, stem, leaf type relation for a complete and single leaf, flowers shaped organ and unique color. The rhizome of the plant family Zingiberaceae generally has aromatic compounds that characterize each type in its utilization by local people (Hartanto *et al.*, 2014). The diversity of plant species in this family Zingiberaceae is due to frequent cultivation of plants for use as medicinal herbs in pregnancy and postpartum by the shaman.

In traditional societies in Madura *Kaempferia galanga* L. and *Zingiber officinale* Rosc. are used as medicinal herbs to warm up the body for postpartum mothers (Mangestuti *et al.*, 2007). *Kaempferia galanga* L. and *Alpinia galanga* (L.) Wild. by the people of Malay are used as one of the herbs for postnatal baths (Razak *et al.*, 2018). Based on the society, *Kaempferia galanga* L. is known to playing a role in the healing process of postpartum the reproductive organs, with regard to the content of essential oil that has anti-inflammatory activities (Rosadi *et al.*, 2018). The volatile oil content is also known to be useful for eliminating odors in postpartum reproductive organs. The people consider that the temperature of postpartum mothers will decrease, so many tribes traditionally prepare to administer a drug plant of *Zingiber officinale* Rosc. or *Alpinia galanga* (L.) Wild, which is useful to warm up the body and breastfeeding of the mother (Manderson, 2003; Ong *et al.*, 2014).

Preparation and Consumption of Herbs as Medicinal Plants

Five types of herbs used a medicinal plants by the Dayak Tomun in the treatment of pregnant and postpartum women were retrieved, among them herbs for the treatment of pregnant, postpartum and breastfeeding mothers (Table 1). The use and utilization of parts of the plant as a medicinal herb pregnant and postpartum including leaves, stems, flowers, the fruit is widely used by traditional societies (Kaingu *et al.*, 2011; Duru *et al.*, 2016; Falah & Hadiwibowo, 2017). The composition of the ingredients of herbal medicine used in the treatment of pregnant, giving birth and post stimulation of breast milk in Dayak Tomun made from the leaves (52%), followed by the root (26%), rhizome (13%) and the least

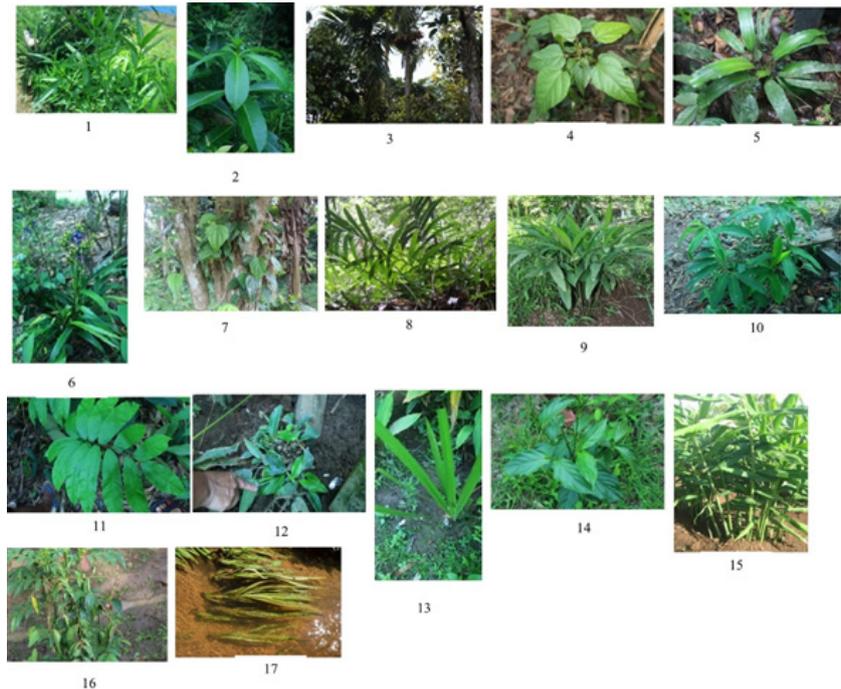


Figure 2. Medicinal Plants for Pregnant and Postpartum in Dayak Tomun

was followed by the stem and fruit (4%). The use of the most widely used leaves to get pregnant, giving birth and post stimulation of breast milk by traditional Dayak shaman Tomun (*moalap* and *poalap*). such use is done because the leaves of the plant are very easily obtainable and used to compare other plant parts. The use of the leaves is considered easiest to mixed a traditional medicinal herb because its fabric is soft and easily crushed.

Part leaves as much as 59% used by traditional societies of Eastern Uganda in the treatment of pregnant women (Nalumansi *et al.*, 2017). The composition of the most medicinal herb, used with the leaves (30%) for the treatment of a pregnant woman's health conditions in Menoua Division-West Cameroon (Yemele *et al.*, 2015). Parts of the leaves are used as an ingredient of herbs because part of it's easy to do the extraction in herb medicines (Savithamma & Rao, 2011).

Preparation of herbal medicine on postpartum in local Dayak Tomun society called *sembrani*. Herb *sembrani* to apply on postpartum mothers. *Sembrani* mixed use 17 types of medicinal plants, including *Justicia gendarussa* Burm.f., *Alstonia scholaris* Linn , *Areca catechu* L., *Bixa orellana* L., *Mapania cuspidata* (Miq.) Uittien, *Dianella nemerosa* Lam., *Piper betle* L., *Drynaria sparsisora* (Desv.) T. Moore, *Tectaria herpetocaulos* Holttum, *Alpinia galanga* (L.) Wild, and *Costus speciosus* J.

Koenig Sm. This herb is given to the postpartum mother with the process and the betel (*pepinangan sirih*) and affixed (*kolas*) on the abdomen and head.

Regarding the plant part used in herbal medicine, as much as 51.85% used in the potion was part of the leaf (Figure 3.). The most common means of processing applied in the Dayak Tomun society was boiled (37.5%) (Figure 4.). The technique of boiling the herb and placing it on the head according to the customs of figures (*mantir adat*) and shaman (*moalap* or *poalap*) is very effective compared with heating and pounding. Boiled is done because it will ease the process of discharge of the active compounds in the herb.

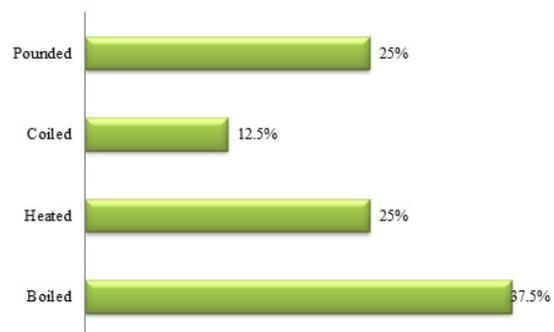


Figure 3. Preparation of Herbal Medicinal Plants for Pregnant and Postpartum Women in Dayak Tomun

Table 1. List of Medicinal Plant Species Used During Pregnancy and Postpartum in Dayak Tomun

Fig. Plants	Scientific Name/ Local Name	Family	Part of Plants	Usability	Herb
1	<i>Justicia gendarussa</i> Burm.f./ <i>Hohidup</i>	Acanthaceae	Leaves, Root		¹⁾ All roots, leaves and fruit species of medicinal plants mixed gambier, whiting, and dried tobacco. Palnt parts in chewed for betel (<i>pepinangan sirih</i>).
2	<i>Alstonia scholaris</i> Linn/ <i>Pulai</i>	Apocynaceae	Leaves, Root		
3	<i>Areca catechu</i> L./ <i>Piang</i>	Arecaceae	Fruit		
4	<i>Bixa orellana</i> L./ <i>Kesumba</i>	Bixaceae	Leaves		²⁾ All roots and leaves species of medicinal plants are boiled for drunk and steam.
5	<i>Mapania cuspidata</i> (Miq.) Uittien/ <i>Kapuyembun</i>	Cyperaceae	Root, Stem		
6	<i>Dianella nemerosa</i> Lam./ <i>Totanjan</i>	Liliaceae	Leaves, Roots		³⁾ All leaves of medicinal plants each of the odd number heated. Then affixed on the head and the stomach.
7	<i>Piper betle</i> L./ <i>Sirih</i>	Piperaceae	Leaves		The leaves of medicinal plants pounded. Then smeared on the head.
8	<i>Drynaria sparsisora</i> (Desv.) T. Moore/ <i>Genguho</i>	Polypodiaceae	Rhizome		
9	<i>Alpinia galanga</i> (L.) Wild./ <i>Kayu Panas</i>	Zingiberaceae	Root		
10	<i>Costus speciosus</i> J. Koenig Sm./ <i>Tetabai</i>	Zingiberaceae	Leaves, Root		
11	<i>Tectaria herpetocaulos</i> Holttum/ <i>Keringking</i>	Tectariaceae	Leaves	Postpartum	
12	<i>Kaempferia galanga</i> L./ <i>Cokur</i>	Zingiberaceae	Rhizome, Leaves		All leaves and rhizome species of medicinal plants mixed with rice birdlime and pounded, then smeared on the head and the stomach.
13	<i>Acorus calamus</i> L./ <i>Jerangau</i>	Araceae	Leaves	Pregnant	
14	<i>Psychotria viridis</i> Ruiz & Pav./ <i>Bebaro</i>	Rubiaceae	Leaves		The leaves and rhizomes of medicinal plants are mixed boiled and drunk.
15	<i>Zingiber officinale</i> Rosc./ <i>Jahe</i>	Zingiberaceae	Rhizome	Stimulation of breast milk	
16	<i>Sauropus androgynus</i> (L.) Merr./ <i>Kayu Guam</i>	Phyllanthaceae	Leaves	Stimulation of breast milk	The leaves of species of medicinal plants are boiled in water and drunk.
17	<i>Vallisneria americana</i> Michx./ <i>Jerangau Air</i>	Hydrocharitaceae	Leaves, Root	Pregnant	The leaves of medicinal plants pounded. Then smeared on the head.

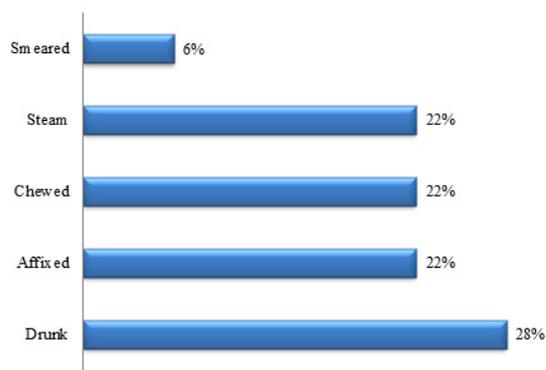


Figure 4. Consumption of Herbal Medicinal Plants for Pregnant and Postpartum Women in Dayak Tomun

Heating by means of boiling is also practiced by traditional Malay society in the treatment and bathing of postpartum women (Manderson, 2003). In traditional societies in Anyi-Ndenye, medicinal plants for pregnant women are prepared by way of boiling, because boiling according to the society is the preparation method that yields the most easily consumed product (Malan & Neuba, 2011). Similarly, in Mien of Northern Thailand, the boiled is the method for preparing herbal medicines for postpartum women. The leaves and stems of the plants medicinal are the most commonly used (Panyaphu *et al.*, 2011).

The results of interviews with the chairman of the Dayak Tomun society indicated that the consumes as much as 28% of their herbal medicines by a drunk and affixed. Medicinal herb consumed with drunk would be easily absorbed by the body, so the healing process will be faster. Maroyi (2013), the consumption of drugs by the way drunk will give you the benefits of a more effective through absorption in the digestive system and streamed into the bloodstream. Yusro *et al.*, (2014), on the Dayak Kendayan, Daro, Bukat and Iban in West Kalimantan presentation by way of drinking a lot performed

In traditional societies of Brou, Saek, and Kry pregnant and nursing mothers drank a medicinal herb extracts to protect the fetus, provide strength to the pregnant woman and stimulate the production of the mammary glands in the mother during childbirth (de Boer & Lamxay, 2009). In Mien (Yao) societies in Thailand due to the results of herbs medicine sample preparation will be applied with steam and washed on a mother who gave birth to ten to thirty minutes, once or twice a day with used repeatedly every day until the smell and herb medicinal colors is fade (Pany-

aphu *et al.*, 2011).

Knowledge of the preparation and consumption of medicinal plants for the treatment of pregnant and postpartum acquired through oral tradition. The practice of the use of traditional medicine for expectant mothers and post-birth form of medicinal plants and herbs in the society of confidence and trust in the local culture (Withers *et al.*, 2018). To this day, that kind of knowledge has been kept alive. However, due to the relatively long time taken for pregnant and gave birth to heal with the use of traditional medicine in the treatment of many herbalists in *Dayak Tomun* that combines the traditional medicine and the medical treatment with help from a doctor or midwives in the hospital and local clinics. Tradition medicine traditions and the utilization of medicinal plants on pregnant and postpartum in *Dayak Tomun* society provide a perspective in local knowledge of traditional medicine, plant diversity and the introduction of plant types are utilized. The results of the research on traditional medicine and utilization of the plant that is used as a medicinal herb of *Dayak Tomun* to contribute positively to the development of science and policy in the management of natural resources as well as preserving the cultural system in local traditional societies.

CONCLUSION

Dayak Tomun is a society that settled in the area in Central Kalimantan Lamandau Regency. The Dayak community Tomun in the Lamandau Lopus Village in the treatment of pregnant and postpartum women use 17 species of medicinal plants which are composed of 14 families. The widely used medicinal plants in the Zingiberaceae family domination with part of the leaves that is widely used as a medicinal herb. Medicinal herb used many processed by way of boiled and served with the way the drunk. Processing and treatment knowledge is obtained based on the ancestors of Dayak Tomun society orally.

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