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Potential of medicinal plants for internal diseases in the dayak jangkang community, sanggau regency, west kalimantan, indonesia

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ABSTRACT

Dayak Jangkang people's knowledge about the potential use of plants as medicine to cure internal diseases has not been found in the scientific literature. This research aims to record the types of plants (local name, scientific name, family), plant organs used, processing methods, specifications of plant benefits used by Dayak Jangkang people to treat internal diseases. The research approach used is qualitative descriptive. The data collection tool used is a semi-structured interview sheet. The informant who helped the research process was as many as ten people. Informant was determined using purposive sampling techniques. The data is analyzed descriptively based on interviews and literature studies. The results of the study were obtained as many as 34 types of plants that were used by the Dayak Jangkang tribe to treat internal diseases. The number of families used as many as 19, with the most families being Zingiberaceae.

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INTRODUCTION

Indonesia is a tropical country that has a variety of topographic types and different climatic conditions. Indonesia's diverse natural conditions also have a high level of biodiversity. The high level of biodiversity makes Indonesia has a variety of medicinal plants. The variety and ease of ingredients for medicinal plants suitable for disease sufferers in Indonesia, risk-usability ratios that are more beneficial to sufferers, and the weakness of synthetic chemical drugs make medicinal plants have high prospects and opportunities to be developed. Drugs from natural ingredients are also considered to have almost no harmful side effects. The existence of local wisdom is owned,

causing rural communities to utilize the plants around it as medicine (Katili, Latare & Nauko, 2015).

Plants or traditional medicinal plants can be used as medicine, both deliberately planted (cultivated) and plants that grow wildly (Nursiyah, 2013). Plants are used by the community to be concocted and presented as a medicine for healing diseases. Traditional medicine is a medicinal herb derived from medicinal herbs (Harjawinata, Hardhienata & Qur'ania, 2015). The plant is used by the community to be concocted and presented as a medicine for healing diseases. Efficacy is an indication that the plant can be used as a medicine. This phenomenon is due to the content of secondary metabolites or active compounds that have the working power in the treatment of each plant (Nursiyah, 2013). Medicinal plants have been used to treat various diseases in various parts of the world (Idu & Onyibe, 2007; Beyene, Beyene & Deribe, 2016; Yuan, Ma, Ye & Piao, 2016). Medicinal herbs are an integral part of the world health care system, providing affordable, relatively inexpensive herbal remedies with cultural implications (Van Wyk & Prinsloo, 2018; Erhabor, Erhabor & McGaw, 2019). Medicinal herbs are also the most accessible health resource for rural communities (Dar, Shahnawaz & Qazi, 2017). Medicinal herbs are products of long-term clinical practice that have excess curative effects and have fewer side effects or low toxicity (Li, Huang, Lu, Ding, Jiang, Hu & Zeng, 2019; Pradhan, Mishra, Mishra, Panda, Behera, Jha & Choudhury, 2012).

Dayak Jangkang people in Kobang Hamlet, Jangkang Benua Village, Jangkang Subdistrict, Sanggau Regency, West Kalimantan Province still believe in alternative medicine by utilizing plants around it that are considered efficacious medicine as an alternative in treating internal diseases. Internal medicine, often referred to as an internalist disease, is associated with disorders of organs in the human body. Many internal illnesses are chronic diseases and require special treatment. Public knowledge about the use of plants as a remedy for internal diseases is derived from ancestors' inheritance and inherited for generations. This ability is a collaboration created from the local wisdom of indigenous Dayak Jangkang people in utilizing the diversity of existing medicinal plants. This local wisdom stems from the results of community trials on plants around the place of life to meet the need for treatment. The local knowledge of the Dayak Jangkang community eventually became a handle in meeting the need for treatment.

However, public knowledge about the use of plants as a cure for the disease to the most extent is still limited to hereditary knowledge as a form of interaction between the community and the environment, especially plants (ethnobotany) (Atmojo, 2015). Today medicinal plants or herbal plants have been widely used in the medical or health fields. Today's society prefers to use products of natural origin for safety reasons. Medicinal plants or herbal plants can be interpreted as all types of plants containing natural chemical compounds that have important pharmacological and bioactivity effects against infectious diseases to degenerative diseases (Suryanto & Setiawan, 2013). People feel that traditional medicine comes from cheaper natural ingredients and raw materials are easier to obtain (Nursiyah, 2013). In addition, the local wisdom of the community in certain communities allows the utilization of traditional medicines (Situmorang & Harianja, 2014). The World Health Organization (WHO) recommends the use of traditional medicine including herbal medicine in the maintenance of public health, prevention, and treatment of diseases, especially for chronic diseases, degenerative diseases, and cancer (Setiawati, Immanuel & Utami, 2016).

The use of plants as traditional medicine in one area can not only be used to treat minor diseases but can also be used to treat severe diseases such as internal diseases (Wildayati, Lovadi & Linda, 2016). The Dayak Jangkang tribe traditionally treats internal diseases because it is easy to process and cheap compared to modern medicine. Some previous research results report on the use of plants in the traditional medicine of internal illnesses (Meliki, Linda & Lovadi, 2013; Takoy, Linda & Lovadi, 2013; Mulyadi, 2014; Wildayati et al., 2016). This research aims to find out

plants that have the potential to treat internal diseases and traditional ways of utilization and processing by the Dayak Jangkang people. Based on various problems that have been raised, it becomes imperative to research the potential of medicinal plants for internal diseases in the Dayak Jangkang tribe.

RESEARCH METHODS

Research Design

The approach used in this study is qualitative descriptive. The qualitative descriptive approach referred to in this study is to describe data on the utilization of medicinal plants to treat internal diseases according to the original data obtained from interviews with informants in the Dayak Jangkang tribal community.

Respondents

Informants involved in this study were as many as ten people. They consisted of the chairman there (1 person), the village head (1 person), and the community who do activities to know the type of medicinal plants and use medicinal plants in their daily lives (8 people). The technique researchers chose and used in determining informants is purposive sampling because it is easy to perform and follows research purposes. The criteria that can be an informant by the requirements defined by the researcher are: (1) the informant must be the indigenous Dayak tribe, (2) has been the customary chairman or is serving as the customary chairman, (3) has been the village head or is serving as the village head, (4) people who know and use plants for traditional medicine.

Instruments

The instrument used in the study was a semi-structured interview sheet. Semi-structured interview sheets used by researchers are first arranged according to indicators that the researcher has determined. The interview is addressed to all informants determined. Here are semi-structured interview guidelines that guide when retrieving data on medicinal plants utilized by the Dayak Jangkang tribe in treating internal diseases (Table 1).

Table 1. Interview guidelines

Question
Is there a plant that you use to treat heartburn? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant you use to treat hepatitis B? What are the local names of plants and parts used? How's it processed?
Is there a plant that you use to treat swollen pain? What are the local names of plants and parts of plants used? How's it processed?
Are there any plants that you use to treat poisoning? What are the local names of plants and parts of plants used? How's it processed?
Are there any plants that you use to treat cough pain? What are the local names of plants and parts of plants used? How's it processed?
Are there any plants that you use to treat worms? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat stomach pain? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat diarrhea? What are the local names of plants and parts of plants used? How's it processed?

Is there a plant that you use to treat dysentery? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat Muntaber pain (gastroenteritis)? What are the local names of plants and parts of plants used? How's it processed?
Are there any plants that you use to treat cholera? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat intestinal pain down? What are the local names of plants and parts of plants used? How's it processed?
Are there any plants that you use to treat breast milk deficiency? What are the local names of plants and parts of plants used? How's it processed?
Are there plants that you use to treat hypertension? What are the local names of plants and parts of plants used? How's it processed?
Are there plants that you use to treat pain difficult to urinate? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat kidney stone pain? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat a sore throat? What are the local names of plants and parts of plants used? How's it processed?
Are there any plants that you use to treat malaria? What are the local names of plants and parts of plants used? How's it processed?
Are there any plants that you use to treat headaches? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat a fever? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat sprains? What are the local names of plants and parts of plants used? How's it processed?
Are there any plants that you use to treat cholesterol pain? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat pain difficult to defecate? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat rashes in the baby's mouth? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat colds? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that You use to treat sore throat swelling due to a centipede bite? What are the local names of plants and parts of plants used? How's it processed?
Is there a plant that you use to treat swelling pain in the outside body? What are the local names of plants and parts of plants used? How's it processed?
Are there any plants that you use to treat postpartum recovery? What are the local names of plants and parts of plants used? How's it processed?

Procedures

Research on medicinal plants that can treat internal diseases in the Dayak Jangkang tribe from May to July 2021. The stages of preparing research instruments, conducting interviews with informants, taking photos of plants to treat internal diseases in the forest, and analyzing research data. The research stages conducted by the researchers are presented in Table 2.

Table 2. Research procedure

No	Time	Stages of Activity	Activity Details
1	8-22 May 2021	Compile a semi-structured interview sheet	The interview sheet is arranged in the form of questions related to internal diseases
2	June 2, 2021 - June 6, 2021	Interview	Researchers conducted interviews with ten informants
3	7 - 8 June 2021	Photo taken of medicinal plants	Researchers together with the customary chairman took photos of plants in the forest
4	July 2021	Analysis of research data	Researchers determine the scientific name and family of medicinal plants obtained from the field

Data Analysis

The data analysis used in this study is qualitative descriptive based on interviews with informants and literature studies related to the utilization of plants to treat internal diseases in the Dayak Jangkang tribal community. Data from interviews with informants will be grouped by plant type (local name, scientific name, family), plant organs used, processing methods, specifications of plant benefits used by Dayak Jangkang people to treat internal diseases.

RESULTS

The results of this study obtained through interviews and field observations with informants in the Dayak Jangkang tribe showed that plants used to treat diseases in as many as 34 plants consisting of 19 families, including the family Zingiberaceae (6 species), Poaceae (3 species), Piperaceae (3 species), Lamiaceae (3 species), Araceae (2 species), Arecaceae (2 species), Rubiaceae (2 species), Moraceae (2 species), and the families Iridaceae, Rosaceae, Acoraceae, Annonaceae, Apocynaceae, Compositae, Dilleniaceae, Malvaceae, Myrtaceae, Meliaceae, and Caricaceae every one species. The Dayak Jangkang tribe used medicinal plants in Kobang Hamlet to treat internal diseases in various ways as follows: by boiling and drinking (20 species) plants, mashed by pounding and drunk or used directly (4 species), mashed by pounding and affixed to diseased body parts (6 species), and poured or rubbed into a sick part of the body (4 species). The plant organs used by the Dayak Jangkang tribe in Kobang Hamlet to treat internal diseases include the following: leaves (20 species), rhizomes (7 species), roots (3 species), bulbs (2 species), fruit (2 species), stems (2 species), seeds (2 species), layer bulbs (1 species), bark (1 species). The results of the study can be seen in Appendix 1.

DISCUSSION

Dayak Jangkang people use plants to treat diseases in using plants from 19 families. The widely used families are the family Zingiberaceae (6 species), the family Piperaceae (3 species), the family Poaceae (3 species), and Lamiaceae (3 species). Zingiberaceae family were used to treat internal diseases by the Dayak Jangkang tribe are as follows. (a) *Zingiber officinale* is used for post-natal labor recovery, fatigue, and treating swelling due to injury. (b) *Zingiber purpureum* is used to treat swelling due to sprains, and post-natal energy recover. (c) *Curcuma zedoaria* for worm medicine. (d) *Curcuma amada* is used to treat hepatitis B. (e) *Curcuma aeruginosa* for cough medicine and poison antidotes in the body. (f) *Curcuma domestica* for the drug ulcer, hepatitis B, accelerates the healing of post-natal wounds.

Zingiber officinale has biological effects such as antioxidants, anticancers (Wang, Chinnathambi, Nasif & Alharbi, 2021), anti-inflammatory, and antiapoptosis (Talebi, Ilgün, Ebrahimi, Talebi, Farkhondeh, Ebrahimi & Samarghandian, 2021). *Zingiber purpureum* is used as a spice and folk remedy to treat fever, headache, abdominal pain, rheumatism, and obesity (Sato, Kataoka, Sato, Takahashi, Norikura & Mukai, 2018), and has substances that can prevent and reduce symptoms that occur due to covid-19 (Musdja, 2021). *Curcuma zedoaria* has been used as a traditional medicine because it has anti-inflammatory biological effects (Lee, Trinh, Lee, Kim, So, Moon, Hwang, Kang, Kim, Yamabe & Kim, 2019). *Curcuma amada* exhibits a variety of antifungal activities so that it can be used in traditional medicine to treat all types of skin diseases (Policegoudra, Vairale, Chattopadhyay, Shivaswamy, Aradhya & Raju, 2020). *Curcuma aeruginosa* can be a naturally antimicrobial substance (Akarchariya, Sirilum, Julsrigival & Chansakaowa, 2017). *Curcuma domestica* has bioactive, antioxidant, and antibacterial components (Kebede, Forsido, Tola & Astatkie, 2021).

Dayak Jangkang people also use plants from the family Piperaceae. As for the type of plant used, *Piper betle* for the drug of blurred eyes, vaginal discharge. *Piper crocatum* to treat hepatitis B. *Piper nigrum* for cold medicine. *Piper betle* is a potential source of wound healing agents (Thịa, Nguyễn & Hoang, 2021) and has biological activities such as antioxidants, antimicrobials, and anticancer (Zamakshshari, Ahmed, Nasharuddin, Hashim, Mustafa, Othman & Noordin, 2021). *Piper crocatum* is used traditionally to heal diabetic wounds, inhibit bacterial growth, and as an antiseptic (Edikresnha, Suciati, Suprijadi & Khairurrijal, 2021; Setyawati, Wahyuningsih, Nugrahaningsih, Effendy, Fneish & Fortwengel, 2021). *Piper nigrum* is widely used in traditional medicine and has many biological properties such as antioxidant, antibacterial, and antimutagenic (Zahin, Bokhari, Ahmad, Husain, Althubiani, Alruways, Perveen & Shalawi, 2021).

The Dayak Jangkang tribe also uses the family Poaceae to treat internal diseases. A plant type of the Family Poaceae is *Imperata cylindrica* for sore throat medicine. *Cymbopogon citratus* for cough medicine. *Cymbopogon nardus* for the drug cold. *Imperata cylindrica* has bioactive compounds that reduce pain and fever (Razafindrakoto, Tombozara, Donno, Gamba, Nalimanana, Rakotondramanana, Andrianjara, Beccaro & Ramanitrahasimbola, 2021). *Cymbopogon citratus* is used in traditional medicine to treat inflammatory diseases because it has anti-inflammatory and antioxidant activity (Li, Luo, Zhang, Cai, Wu, Tan, Chen, Chen, Wang & Zhang, 2021). *Cymbopogon nardus* becomes a good source of antitrypanosomal agents used in traditional medicine to cure fever and headaches (Kpoviessi, Bero, Agbani, Gbaguidi, Kpoviessi, Sinsin, Accrombessi, Fredderich, Moudachirou & Leclercq, 2014).

Dayak Jangkang people also use plants from the family Lamiaceae to treat internal diseases. The types of plants used are *Premna cordifolia* to eliminate body odor, *Vitex pinnata* to treat headaches, *Orthosiphon stamineus* to treat impaired kidney function, and treat difficulty urinating. *Premna cordifolia* has phenolic chemicals and flavonoids that play a very active antioxidant activity (Ali, 2008; Bakar, Mohamed, Hamid & Mustafa, 2010). *Vitex pinnata* contains flavonoids, alkaloids, steroids, tannins, and saponins that act as antioxidants (Fatmaria, Toemon, Lestarisa, Mutiasari & Yeni, 2019). *Orthosiphon stamineus* exhibits pharmacological activities such as antimicrobial, antioxidant, antiplasmodial, antidiabetic, and anti-inflammatory (Ashraf, Sultan & Adam, 2018).

Dayak Jangkang people use plant organs in roots, bulbs, layer bulbs, stems, leaves, bark, fruit, and seeds to traditionally treat internal diseases. The use of these organs is because it is easily obtained in the forest, easy to process, done for generations by the local community so that the community has confidence in the efficacy of the plant organ. The part of plant organs widely used to treat internal diseases by the Dayak Jangkang tribe is the leaves. The reason people use leaves as a remedy for internal diseases is (1) the availability is many and easily obtained, (2) processing is

simply to done, (3) the community is convinced that the leaves have better efficacy than other organs. Ian, Anam & Khumaidi (2015) support that the leaves accumulate photosynthetic results containing elements of organic substances that can cure diseases.

The way of utilizing and using plants to treat internal diseases by the Dayak Jangkang community in Kobang Hamlet is by boiling and drinking as many as 20 species of plants. Many people process medicinal plants by boiling and drinking because boiling can make it easier to release sap and the properties contained in plant organs. How to use more by drinking, because it is easy to do, in this way the community believes that the drug's efficacy is quickly absorbed by the body and promptly cures diseases. The research results also support this reason by Supiandi, Mahanal, Zubaidah, Julung & Ege (2019), which states that using boiling and drinking will speed up the absorption of substances contained in plants by the body.

CONCLUSION

Dayak Jangkang people in Kobang Hamlet, Jangkang Subdistrict, Sanggau Regency of West Kalimantan Indonesia have traditional knowledge in utilizing plants to treat internal diseases. The Dayak Jangkang tribe uses plants in Kobang Hamlet as a medicine to treat diseases in as many as 34 species consisting of 19 families. The most widely used family is the family Zingiberaceae (6 species). The most commonly used method of processing and utilization of medicinal plants by boiling and drinking as many as 20 species of plants. Plant organs widely used to treat internal diseases are the leaves of as many as 20 species. This research can be a reference for the wider community to preserve traditional knowledge in utilizing plants that have medicinal properties and make efforts to conserve plants that have uses as a traditional medicine to treat internal diseases.

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Appendix 1. List of plants to treat internal diseases by Dayak Jangkang tribe

No	Local Name	Scientific Name	Family	Plant organs used	How to Process	Benefits Specifications
1	Bongah	*Curcuma domestica* Valeton.	*Zingiberaceae*	Rhizome	Shredded or mashed, boiled, drunk	To treat heartburn, liver/hepatitis, speed up the recovery and healing of wounds in postnatal and to treat wounds or swelling due to impact
2	Bongah raya hitam	*Curcuma aeruginosa* Roxb.	*Zingiberaceae*	Rhizome	Shredded or mashed, boiled, drunk	For antidotes to toxins in the body and cough medicine
3	Bongah raya kunyit	*Curcuma amada* Roxb.	*Zingiberaceae*	Rhizome	Shredded or mashed, boiled, drunk	To treat liver/hepatitis
4	Bongah raya putih	*Curcuma zedoaria* Roxb.	*Zingiberaceae*	Rhizome	Shredded or mashed, boiled, drunk	To treat worms
5	Loyak nogolai	*Zingiber purpureum* Roscoe.	*Zingiberaceae*	Rhizome	- Pounded, affixed to a sprained part of the body - Mashed by pounding and rubbing all parts of the body after delivery	To treat swelling due to sprains. Helps recovery and accelerates wound healing in postnatal
6	Loyak joronang	*Zingiber officinale* Roscoe.	*Zingiberaceae*	Rhizome	Pounded and drunk. Or mashed, boiled and drunk	For energy recovery, accelerate the healing of wounds in post-delivery, treat swelling due to injury
7	Boik	*Piper betle* L.	*Piperaceae*	Leaf	The leaves are boiled, evaporated on the eyes or boiling then the eyes are soaked in boiled water that has been cold	To treat blurry/blurry eyes, and vaginal discharge

8	Boik remaung	*Piper crocatum* Ruiz & Pav.	*Piperaceae*	Leaf	Boiled and drunk	To treat jaundice/liver/hepatitis B
9	Sahang	*Piper nigrum* L.	*Piperaceae*	Fruit	Pounded, mashed and drunk	To treat colds
10	Lalang	*Imperata cylindrica* (L.) Raeusch.	*Poaceae*	Root	Pounded and rubbed/melted in the neck or pounded and drunk	Treating the throat and difficulty swallowing
11	Sorai	*Cymbopogon Citratus* (DC.) Stapf.	*Poaceae*	Stem	Defiled, boiled and drunk	Cough medicine
12	Sorai wangi	*Cymbopogon nardus* (L.) Rendle.	*Poaceae*	Leaf and stem	Pounded and rubbed/stretched throughout the body	Helps treat colds
13	Kudok betawi	*Xanthosoma sagittifolium* (L.) Schott.	*Araceae*	Tuber	Boiled and drunk	To reduce hypertension
14	Tungun	*Homalomena occulta* (Lour.) Schott.	*Araceae*	Tuber and leaf	Pounded and attached to the part of the body affected by a centipede bite	To treat a bite of centipede
15	Uwai	*Areca catechu* L.	Arecaceae	Fruit	Boiled and drunk	To treat vaginal discharge
16	Uwai merah	*Cyrtostachys lakka* Becc.	Arecaceae	Root	Pounded, thickened or pasted	To treat "Kibang" disease (infection due to viruses or bacteria in the body)
17	Koyuh ringkan	*Ficus variegata* Blume	*Moraceae*	Fruit	The fruit is pounded and drunk and poured on the lower abdomen	To treat the intestines down
18	Koyuh kedadai	*Ficus fistulosa* Reinw. ex Blume	*Moraceae*	Leaf	Boiled and drunk	For recovery and to speed up wound healing in post-natal and breast milk enhancer
19	Tobang	*Psychotria*	*Rubiaceae*	Leaf	Boiled and drunk	To treat stomach pain

		viridis Ruiz & Pav.				
20	Engkudu	*Morinda citrifolia* L.	*Rubiaceae*	Leaf	Boiled and drunk	To treat the liver
21	Berbuas	*Premna cordifolia* Roxb.	*Laminaceae*	Leaf	Boiled and drunk	To eliminate body odor
22	Ngarut	*Vitex pinnata* L.	*Laminaceae*	Leaf	Boiled and drunk or finely ground, affixed to the head	To treat headaches
23	Kumis kucing	*Orthosiphon stamineus* Benth.	*Laminaceae*	Leaf	Boiled and drunk	To treat difficulty urinating and treat impaired kidney function
24	Bawang ruma	*Eleutherine americana* (Aubl.) Merr. ex K.Heyne	*Iridaceae*	Layer tuber	Boiled and drunk water or by pounding the layer bulbs and rubbed with green coconut oil on the legs that are uric acid	To treat gout
25	Engkorek	*Rubus moluccanus* L.	*Rosaceae*	Leaf	Pounded, squeezed with water and drunk	To treat abdominal pain, diarrhea, dysentery
26	Jerongo	*Acorus calamus* L.	*Ancoraceae*	Rhizome	Rhizomes are mashed by pounding, drunk	Antidotes to poison and to treat cough
27	Jita	*Alstonia scholaris* (L.) R. Br.	*Apocynaceae*	Leaf	Boiled and drunk	To treat diarrhea, dysentery, cholera
28	Lidah kambing	*Elephantopus scaber* L.	*Compositae*	Leaf	Boiled and drunk	To treat malaria, headaches accompanied by fever
29	Nangka belanda	*Annona muricata* L.	*Anonaceae*	Leaf and seed	The leaves are boiled and drunk. The seeds are pounded and drunk with water.	To lower cholesterol and treat difficulty defecating
30	Pangan	*Dillenia suffruticosa* (Griff.) Martelli.	*Dilleniaceae*	Leaf	Boiled and drunk	For recovery and speeding up wound healing in post-delivery

						and for smoothing breast milk
31	Pota pongayoh	*Sida rhombifolia* L.	*Malvaceae*	Leaf	In mash, affixed to a sprained part of the body	To treat swelling due to sprains
32	Risak	*Rhodomyrtus tomentosa* (Aiton.) Hassk.	*Myrtaceae*	Leaf	The leaves and shoots are mashed and drunk for stomach pain and to treat rashes in the baby's mouth.	To treat wounds from sharp objects, abdominal pain and to treat rashes on the baby's mouth
33	Rosat	*Lansium domesticum* Corrêa.	*Meliaceae*	Roots, bark, seed meat	Boiled and drunk	To treat dizziness and fever for more than a day and to treat malaria
34	Stela/kates	*Carica papaya* L.	*Caricaceae*	Leaf	Boiled and drunk	To treat malaria, headaches accompanied by fever