Local knowledge of Kajang's Indigenous community in Utilizing Forest Plants for treatment

A S Mahbub¹, Makkarenu¹, N Usbar²
¹Lecturers from the Faculty of Forestry Hasanuddin University, Makassar
²¹Students of the Faculty of Forestry Hasanuddin University, Makassar

E-mail: usbarnurhikmah@gmail.com

Abstract. The use of medicinal plants is one of the skills, and it’s local wisdom that is still practiced by Kajang’s Indigenous community. This study aims to identify and inventory local knowledge of Kajang’s Indigenous community in Utilizing Forest Plants for treatment. Data retrieval method is carried out by field observations and interviews. The data obtained were then analyzed using descriptive methods to describe systematically the use of forest plants used for treatment. The results of this study indicate that the Kajang’s indigenous community have used forest plants for treatment from generation to generation, there are 43 types of plants that are often and routinely used by communities around the Kajang’s forest area. These types of plants are generally herbaceous, shrubs, trees, some small lianas, and ferns. The utilize is still traditional so that the processing of herbs is very simple, that is by cooking or using it directly. Also, cultivation technology has not been widely developed because of the ease of obtaining raw materials from customary forest areas.

1. Introduction
The indigenous community is community groups that have ancestral origins in various regions and have their value, ideology, economic, social, social and territorial systems [1]. Based on the Government Regulation in Lieu of Law of the Republic of Indonesia Number 1 of 2004 concerning Amendments to Law Number 41 of 1999 concerning Forestry, the customary law community at all times still exists, and it’s recognized, segregation of results to fulfill the daily needs of indigenous peoples who do and carry out customary activities that apply and do not conflict with the law and increase empowerment in order to improve their welfare.

Indigenous community plays an important role in the preservation of natural resources around them because they still have the value of local wisdom. Local wisdom is a transgenerational local knowledge that is owned by the community to manage their environment, namely knowledge that gives birth to behavior as a result of their adaptation to their environment which has positive implications for environmental sustainability and has contained recommendations, prohibitions, and sanctions. [2]. The community develops local knowledge in fulfilling their daily lives because local knowledge is adaptive to their values and norms. One of this local knowledge is to utilize the surrounding environment for treatment needs.

Treatment by using a variety of vegetation from the environment is widely practiced by indigenous peoples. The Kaluppini’s indigenous people in Enrekang Regency practice Pembollo. Pembollo means a mixture of traditional’s medicine from various kinds of plants used by local people to treat various
diseases. Indigenous community in various regions in Kalimantan rely on Sekirei or medical shaman who mix various plants to be used as medicine, while in Bungku Utara District, North Morowali District, Central Sulawesi, the indigenous community in Lipu Fyautiro use tobacco to overcome the cold, attacks by mosquitoes and other insects. These medical practices are pursued by the community, besides because they are indeed transgenerational habits, the affordability of medical facilities is also far and difficult.

Ethnomedicine is a study of health, and also health care of the communities in traditional involve the traditions and beliefs of local or ethnic communities. Traditional medical practices that are still carried out using medicinal plants, prayers, mantras, dances or ceremonies as well as other practices that tend to be still done in traditional communities. Ethnomedicine is related to health and health care. The topic can be related to the types of illnesses and diseases and their traditional handling by using medicinal plants, with prayers, mantras, dances, and ceremonies, or with other traditional practices [3].

One of the indigenous people who live in South Sulawesi is the Kajang Customary Community who live in Tana Toa Village, Kajang District, Bulukumba District. Local empirical knowledge in the field of medicine helps Kajang Indigenous Peoples a lot if they are sick or injured. The presence of Sandro Kajang as a customary figure appointed by Ammatoa (Customary Head) to handle the health of the Kajang Indigenous Community helped support the development of local knowledge. But the weakness of this local knowledge is oral tradition.

Oral tradition in the development of local knowledge can be reduced along with the migration of speakers or the death of speakers. Whereas this local knowledge is a treasure of knowledge that is very valuable to be developed considering that it has been proven empirically and inherited from trans-generation. That is why it is necessary to attempt to identify and inventory this local knowledge, especially in the field of medicine. The customary area of the Kajang Customary Community was chosen as the location of the study because in this area a variety of forest vegetation grew which were used by the Kajang Customary Community as a treatment material. Besides that, data collection will be facilitated by the presence of herbalists (Sandro Kajang) who deal specifically with medical matters using various vegetation.

The purpose of this study is to identify and inventory local knowledge of Kajang Indigenous community in utilizing forest vegetation for treatment. The results of the study are expected to be useful for the consideration of policymakers in preserving local knowledge of medicine as a valuable treasure for the development of science.

2. Research Methods

2.1. Time and Place
This research was conducted in May 2018 until July 2018. In the area of the Kajang’s Indigenous community Tana Toa Village, Kajang District, Bulukumba Regency, South Sulawesi Province.

2.2. Data Types
The type of data taken consists of primary data and secondary data. Primary data is data obtained directly through observation and interviews with respondents; these data relate to local knowledge of the indigenous community in utilizing forest vegetation for treatment. Secondary data is data obtained from research reports, literature, scientific works, and other information related to this research.

2.3. Research Methods
The interviewees in the study were determined by using Snowball Sampling. Snowball sampling is a method of taking samples from a population. The first resource person was determined based on information from various parties. Then an in-depth interview is conducted about the object to be studied. Furthermore, the resource person was asked to appoint parties who understand the treatment using forest vegetation.
2.4. **Data Analysis**

Data analysis used in this study is descriptive analysis. According [4], the purpose of descriptive analysis is to make a systematic, factual and accurate description, description or painting of facts, traits that are based on the tendency of existing information, to describe the wisdom of Kajang’s indigenous community in general and specifically knowing and understanding the wisdom in managing and utilizing forest resources.

3. **Results and discussion**

3.1. **Identification of Types of Medicinal Plants in Kajang**

3.1.1 **Procedures for Treatment of Skin Diseases**

Skin disease is a common infectious disease, occurs in people of all ages. Factors that cause skin disorders, including climate, environment, place of residence, unhealthy living habits, allergies, hives etc. Based on the results of an interview with Sanro Kajang, it is known that the type of skin disease that is usually experienced by the Kajang indigenous people is itching and allergies. Plants used to treat this type of disease are inggu plants (*Ruta angustifolia*), sweet starfruit (*Averrhoa carambola*), pineapple (*Ananas comosus*), and ceremai (*Phyllanthus acidus*). These types of plants can be found around forest areas. Leaf parts are part of the plant that is most often used to treat skin diseases. The method of processing is; Fresh leaves are washed and finely ground, the leaves that have been crushed and then placed on the skin that has itching or allergies.

3.1.2 **Procedures for Treatment of Digestive Diseases**

Indigestion is a disorder of the digestive system that includes the mouth, esophagus, stomach, small intestine, large intestine, rectum, and anus, whereas the digestive system functions to receive food, digest, absorb nutrients, and remove the rest. There are several types of plants that are intended as a traditional medicine for digestive disorders and infections around the sewer. Som Java (*Talinum paniculatum*) and honey leaves (*Barleria cristata*) are plants that have medicinal properties for people who experience stomach ulcers. To facilitate digestion, people use papaya fruit (*Carica papaya*) and guava fruit (*Psidium guajava*). Some fruits and honey leaves are processed simply, cooked the fruit until boiled and then drink it while papaya and guava fruit can be eaten directly or made juice and then drink it.

3.1.3. **Procedure for Treatment of Respiratory Disorders**

Respiratory disorders are infections that spread human breathing; this infection is caused by bacteria or viruses. Respiratory tract infections can be experienced by all ages, although this condition is more susceptible to children because their body's defense system against the virus that causes infection has not been formed. Natural plants that are used as traditional medicine for the treatment of respiratory disorders by the community are Kompri (*Symphytum officinale*) to treat tuberculosis, the fruit is boiled until boiling, then drink it, banyan (*Ficus Benjamina L.*) can treat asthma, the steps are oiled leaves, then drink it while still warm, landed (*Barleria prioritis*) use to treat cough pain, the step is to boil the leaves then filter it, and then drink it, other plants that are often used as treatment is land (*Barleria lupulina*) can cure influenza, boiled the leaves and fruit until boiling and then drink it.

3.1.4. **Procedures for Treatment of Joint Diseases**

Joint disease is a pain in the body that connects the bone to the bone, causing the movement and quality of life of the sufferer to be disrupted. Joint pain lasts short or long, the severity of the pain also varies from mild, medium, to severe. The leaf of gout (*Plumbago zeylanica*) and kemuning (*Murraya paniculata*) is a type of shrub that has a fairly wide habitat, this plant can be found around the yard of people's homes, especially in customary forest areas. The Kajang’s indigenous community uses gout as a traditional medicine for joint pain such as lumbago and aches in the knee. Treatment for lumbago is
enough to use the leaves that are grown and then squeezed and then placed on the aching waist. Whereas for pain on the knees, crushed the fruit and then then rubbed it on the knee of the patient.

3.1.5 Procedures for Handling Injuries

The skin is a barrier of the outside that protects the body from infection, radiation and extreme temperatures, there are many types of wounds that can damage the skin including abrasions, sores, injuries, punctures and cuts through the skin. Wounds are one of the type of injury to the skin that is torn, cut or punctured or when exposed a blunt object causing bruising. In the customary forest area, plant species were identified plant species such as new Chinese (*Arthemisia vulgaris L.*), wungu leaves (*Graptophyllum pictum*), Chinese girlfriends (*Aglaia odorata*) which were used as medicine for wounds to the external body, the step to make it are take a pieces of leaves, then pounded after that apply it to the injury skin or put it to the part of body that wounded. Furthermore, the types of plants that can cure swelling / bruising on the body are Java chili (*Piper retrofractum*), pulai (*Alstonia scholaris*), and duck sausage (*Kalanchoe pinnata*), the method of processing is dried roots and leaves, boiled and then filtered after that drink it or pound the leaves and then put it to the bruised body.

Based on the results of identification and interviews it was found that there were 43 types of plants that were often and routinely used by the community around the Kajang customary forest area. These types of plants are generally herbaceous, shrubs, trees, some small lianas, and ferns. It uses still traditional, so the processing of herbs is very simple, which is cooking or used directly. Also, cultivation technology has not been widely developed because of the ease of obtaining raw materials from customary forest areas. The types of medicinal plants used by the community around the Kajang customary forest can be seen in the following table:

**Table 1.** Types of Medicinal Plants Used by Communities Around Kajang Customary Forest Area

| No. | Local Name  | General Name     | Latin name                     | The Part Used | Efficacy         | How To Process                                      |
|-----|-------------|------------------|--------------------------------|---------------|------------------|-----------------------------------------------------|
| 1   | Burangga    | Baru cina        | *Artemisia vulgaris L.*        | Leaf          | Wound medicine   | Directly attached to the wound, can also be boiled and then drunk |
| 2   | Tambara     | Bayam duri       | *Amaranthus spinosus L.*       | Stem          | Lumbago medicine | Boiled and then drunk, it can also be dried and then shredded until it produces powder, to be smeared on the sore waist |
| 3   | Biccoro     | Beluntas         | *Pluchea indica [L.] Less.*    | Leaf          | Internal medicine | Boiled then drunk                                    |
| 4   | Paliasa     | Beringin         | *Ficus benyamina L.*          | Leaf          | Asthma medication | Boiled then drunk                                    |
| 5   | Sumi karaeng| Cabe Jawa        | *Piper retrofractum*          | Leaf and Root | Swollen medicine | Boiled then drunk                                    |
| 6   | Passassa lahu| Cakar ayam      | *Selaginella doederleini*     | Leaf and Stem | Dizziness        | Boiled then drunk                                    |
| 7   | Jarammele   | Ceremai          | *Phyllanthus acidus*          | Leaf and Seed | Allergy, reduce heat | Ceremai seeds are ground until smooth, brew with hot water then drink |
|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 8 | Lahira | Daun dewa | *Gynura segetum* | Leaf | Reduce heat |
|   |   |   |   |   | Boiled then drunk, or soaked and then placed on the affected body part |
| 9 | Linrapa | Daun duduk | *Desmodium triquetrum* | Leaf | Internal medicine |
|   |   |   |   |   | Boiled then drunk |
| 10 | Sumbila oto | Daun enok | *Plumbago zeylanica* | Root | Lumbago medicine |
|   |   |   |   |   | The leaves are squeezed and then placed at the waist of the sick |
| 11 | Buno bampo | Daun madu | *Barleria cristata* | Leaf and Flower | Ulcer |
|   |   |   |   |   | Boiled then drunk |
| 12 | Rampu-rampu | Daun sendok | *Plantago mayor L.* | Leaf | Typhoid medicine |
|   |   |   |   |   | Boiled, let stand until cool then mixed with red coconut and then drunk |
| 13 | Lahunga | Daun wungu | *Graptothyllum pictum* | Leaf | Wound medicine |
|   |   |   |   |   | Mashed until smooth, then applied to the injured body |
| 14 | Bullu-Bullusu | Gandarusa | *Justicia gendarussa* | Leaf | Break hair |
|   |   |   |   |   | Mashed until smooth, then rubbed into the hair root |
| 15 | Sinrolo | Gude | *Cajanus cajan* | Leaf | Typhoid medicine |
|   |   |   |   |   | Boiled then drunk |
| 16 | Anggoro | Inggu | *Ruta angustifolia* | Leaf | Itching medicine |
|   |   |   |   |   | Smeared on the itchy body |
| 17 | Bila-bila | Kemuning | *Murraya paniculata* | Fruit | Eliminate pain in the knee |
|   |   |   |   |   | The fruit is grated until smooth and then rubbed on the knee |
| 18 | Didi bulang | Kompri | *Symphytum officinale* | Fruit | Puru-puru medicine, tuberculosis |
|   |   |   |   |   | The fruit is grated until smooth and then rubbed on the entire body affected by the puru, for tuberculosis, then drink |
| 19 | Balle | Landep | *Barleria prionitis* | Leaf | Cough medicine |
|   |   |   |   |   | The leaves are cooked then filtered and then drunk |
| 20 | Limpuang | Landik | *Barleria lupulina* | Fruit and Leaf | Influenza, internal medicine |
|   |   |   |   |   | Boiled then drunk |
| 21 | Mangko-mangko | Mangkokan | *Nothoponax scutellarium* | Leaf | Internal medicine |
|   |   |   |   |   | Boiled then drunk |
| 22 | Bunga eja | Murbei | *Morus alba* | Leaf | Febrifuge |
|   |   |   |   |   | Distributed in the body that has decreased body temperature |
| 23 | Burangga | Pacar cina | *Aglaia odorata* | Leaf | Wound medicine |
|   |   |   |   |   | Smeared or can also be attached |
| No. | Name        | Part/Species                  | Fruit/Leaf          | Medicine                  | Application                              |
|-----|-------------|--------------------------------|---------------------|---------------------------|------------------------------------------|
| 24  | Pare        | Padi                          | Oryza sativa        | Lower heat, fever         | Mashed into powder, dried and then made into powder for the body |
| 25  | Siri pute   | Prasman           | Eupatorium triplinerve | Lower heat, fever         | Boiled then drunk                       |
| 26  | Bote-bote   | Pulai                         | Alstonia scholaris  | Lower heat, fever         | Cooked and then drunk, can also be done with a mouth rinse |
| 27  | Sambroto    | Pule pandak                  | Randolivia serpentina | Lower heat, fever         | Boiled then drunk                       |
| 28  | Sombere     | Sambiloto                    | Andrographis paniculata | Malaria medicine         | Boiled then drunk                       |
| 29  | Kayu rampe  | Senggani                     | Melastoma candidum  | Lower heat, fever         | Typhus                                   |
| 30  | Pe'ngo      | Senggugu                      | Clerodendron serratum | Ulcer, vomiting blood     | Boiled then drunk                       |
| 31  | Munyi'- munyi' | Som jawa                  | Talinum paniculatum | Ulcer, vomiting blood     | Boiled then drunk                       |
| 32  | dinging- dinging | Sosor bebek               | Kalanchoe pinnata   | Bruises                   | Boiled then drunk                       |
| 33  | Soong-Soong | Tapak dara                   | Catharanthus roseus | Diabetes, mosquito repellent | Boiled then drunk                       |
| 34  | Binungang   | Tembelekan                   | Lantana camara      | Diabetes                  | Boiled bark is then filtered and then drunk |
| 35  | Apoka       | Alpukat                       | Porsea americana    | Internal medicine         | Directly eaten or juice can also be made |
| 36  | Bainang salapa | Belimbing manis         | Averroa carambolla  | Puru-puru medicine        | Directly eaten or juice can also be made |
| 37  | Jammu borong | Jambu biji                   | Psidium guajava     | Dengue Fever, smooth digestion | The fruit can be made juice, boiled leaves and then drunk |
| 38  | Pandang     | Nanas                         | Ananas comosus      | Allergies, food poisoning | Directly eaten or juice can also be made |
| 39  | Kaliki      | Pepaya                        | Carica papaya       | Malaria                   | Boiled then drunk                       |
| 40  | Paria       | Pare                          | Momordica charantia | Itching / skin remedies   | Boiled then drunk                       |
Based on the results of identification of medicinal plant species in table 1, it is known that the dominant medicinal plants used for the treatment of the Kajang’s indigenous community are shrubs with 20 species of plants, shrubs dominate medicinal plants because sanro Kajang is evenly treated using shrubs. Shrubs are generally grown in forest areas so that they are easily found in the forecasting process. Herba is the second dominant type of plant with a total of 17 species, herbaceous plants usually grow in areas outside the customary forest area, and it needs a short time in the process of taking it considering the access to reach the area. There are many species of the tree around the Kajang’s community area, and there is only 7 species of trees are often used for medical needs that are believed as the medicinal properties. Liana plants propagate as many as 3 types, this type of vines is found naturally and is difficult to cultivate so that it is difficult to obtain for use and types of ferns as much as 1 type, this living plant is very difficult to find in protected forest areas so it's difficult to utilize.

3.2 Knowledge of Local Communities in utilizing Forest Plants for Treatment

Communities around the Kajang’s customary forest area have known medicinal plants for a long time and until now the habit is still being carried out. The local knowledge of the utilize the medical plants already exits since long time ago and has been used for generations and has proven its usefulness by them. The Kajang’s indigenous community knows medicinal plants from the empirical experiences they get along the course of time. There is even a traditional leader called Sanro Kajang / dukun who is assigned the task by Ammatoa specifically to treat the community. Sanro Kajang always develops capabilities and searches for medicinal plants, because it is responsible for community health. Ammatoa said:

"there are many types of plants that are often used for treatment in customary forest areas that can cure all kinds of diseases, from the outside body such as wounds, head to toe and internal of body diseases”.

Parts of plants that are used are from leaves, leaf tops, stems, fruit to plant roots. The process of medical treatment depends on the type of disease suffered by the patient. For the type of internal medicine, medicinal herbs are made by boiling or squeezing and then drink it, while for other types of external diseases, medicinal plants are sufficiently squeezed or grated and then applied to the body indicated by disease. In addition to using plant potions, the treatment process also uses special prayers or spells read by Sandro. According to Amato’s statement that:

"There are 49 types of diseases that often occur in the area of customary forests, 48 types of diseases that can be treated with plants and there is one type of disease that cannot be cured, namely hereditary diseases".

Before being appointed as the Ammatoa, he used to be a medicine healer, because he knows a lot of information about the types of medicinal plant that were often used as medicine, besides using plants as a treatment, the Kajang’s indigenous community still believed in medical expertise in curing diseases, in an interview with one of the residents, Mr. Amir said that:

"If the disease that has been treated with medicinal plants but doesn’t heal the local community, they will occasionally go to the hospital for treatment, for example, people who want to give birth when they are powerless, in this case, we respect each other’s knowledge."

The traditional treatment of Kajang custom has been known outside of the island of Sulawesi; many visitors of Kajang have visited the customary area for treatment. Treatment using plants around the forest with various medicine made based on the type of disease. According to one medical healer, Puto Lasai said that:
“Every disease has a medicine consisting of several types of plants, there are 1 type or up to 9 types of plants, the process is it can make as a concoction, and the applied it to the part body that disease.”

Based on the results of interviews, the narrative of each traditional medicine expert, the use of plants is very often used to be used as medicine. Puto Lasai confirmed that:

“The effort to preserve medicinal plants is that I believe that the medicinal plants that are exist around the customary forest will not run out because it is a gift from nature that will always exist and be sustainable”.

Unlike the Bugis Makassar people who have a script and write various knowledge events and social institutions. Kajang’s indigenous community has an oral tradition. Oral traditions in the Kajang’s indigenous community are inherited from transgenerational. There are two possible endings of the fate of the oral tradition that will increase or become extinct along with the death of the speaker or the occurrence of migration. Conservation efforts that can be taken are to conduct an inventory of local knowledge more deeply and reach out to other aspects of the indigenous people of Kajang. The young generation of Kajang indigenous people through a tidal inheritance mechanism must always strive to keep it and maintain / bequeath these local knowledge. External efforts is the accomplishment of various writings on knowledge of the Kajang people from various aspects in order to culture and knowledge of the Kajang people can be recognized by outsiders and become a valuable repertoire for the development science, particularly in the development of the use of plants for treatment.

4. Conclusion

Based on the results of research that has been carried out, it can be concluded that:

1. Processing of medicinal herbs is still traditional. The treatment process also uses special prayers or spells read by the Sandro, the leaves is the widely used of the part of the plant.
2. Based on the results of the identification, there were 43 types of medicinal plants used by the Kajang’s indigenous community with a classification of 12 types of herbaceous plants, 20 types of shrubs, 7 species of trees, 3 types of lianas and 1 type of fern.
3. Based on the results of the identification, there was 43 types of medicinal plant and it classification with 12 types of herbaceous plants, 20 types of shrubs, 7 species of trees, 3 types of lianas and 1 type of fern.

Reference

[1] Aziz, M., 2008, Sustainable Message from the State of Ammatoa. (Pustaka Refleksi: Makassar) p 89
[2] Mahbub, Asar Said. 2013. Local and Non-Local Knowledge Dialectics (the Pairs of the Pasang Ri Kajang in the Ammatoa Customary Forest Management). Dissertation of Agricultural Science Study Program, Hasanuddin University Graduate Program. Makassar. p 45
[3] Ahimsa., 2007. Prologue in Health Problems in the Study of Socio-Cultural Sciences. ( Kepel press: Yogyakarta) 13-37
[4] Nazir, Moh. 2003. Research Methods. (Ghalia Indonesia: Jakarta) p 67