

Ethnobotany study of potential and utilization of medicinal plants by local communities in Muara Enim Regency, South Sumatera

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ABSTRACT

*Ethnobotany of medicinal plants is a botanical science that studies using plants as drugs to treat a disease. This study aimed to determine the types of plants, processing methods, usage methods, and the use value (UV) of plants used as medicine by local people in Kayuara Sakti Village. The research method used is descriptive exploratory. The sampling technique used is purposive sampling. The research sample consisted of 49 people in Kayuara Sakti Village. They are collecting data using interviews, observation, and documentation. Data analysis in this study is qualitative and quantitative. The results of this study obtained the following data: (1) The types of medicinal plants used by local communities in Kayuara Sakti Village are 100 species belonging to 50 families. Diseases that are often treated are diseases that are commonly suffered by the community. (2) The method of processing medicinal plants is by boiling (44%), pounding/mashing (14), grated and squeezing (13%), brewing (7%), cooking and splitting (5%), without processing (4%), kneaded (3%), burned (2%), soaked, rolled, crushed, roasted and withered (1%). (3) The way to use medicinal plants is by drinking (57%), eating (16%), smearing (10%), dripping (3%), plugging and bathing (2%), and gargling, chewing, and rubbed (1%). (4) Use value (UV) medicinal plants used by the community are 0,02-0,81. The species with the highest value is turmeric (*Curcuma domestica* Val.).*

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INTRODUCTION

Ethnobotany is the study of the utilization of plants in daily life. It is essential to improve the knowledge of ethnobotany to understand the function of various plants that modern society has yet to find requires. Along with the development of this increasingly modern era, society has become reliant on extremely rapid technological advancements, particularly in the medical field. Modern medicine relies on compounds with a greater risk of adverse effects than traditional medicine (Oktavaia et al., 2017).

Muara Enim Regency, especially Kayuara Sakti Village, Gunung Megang District, is a village that has a healthy environment and good administration. In 2018, Muara Enim regency won an award from the Environment Agency of South Sumatra Province. Kayuara Sakti Village is one of the

areas with potential as agricultural and plantation land. Local communities of Kayuara Sakti Village are primarily farmers of palm oil and rubber. However, in the yard, people also use the land to grow vegetables, fruits, and spices such as ginger, turmeric, lemongrass, and others. Some of them are included as medicinal plants because the people of Kayuara Sakti Village are still very close to plants as traditional medicine. However, people only know a few medicinal plants that have often been used, even though many wild plants have the potential to be used as medicine. These conditions are because only some people have complete knowledge about plant processing for traditional medicine, such as herbalists, sorters, and parents (Source: Informants from the community in Kayuara Sakti Village).

Due to adjustments to the development of modern times and technology, there is a tendency for the younger generation to view ancient culture as a characteristic of a primitive society. This condition also causes the knowledge of the benefits of medicinal plants to gradually become extinct in their original place and only in the form of oral knowledge. In recent years, there has been a tendency for the world to return to nature or "*Back to nature*," making people return to medicinal plants. The results of ethnobotanical research or studies can be used or applied in the field of education that has been carried out by several previous researchers, such as ([Hastiana, Y. et al., 2021](#)), showing that teaching materials in the form of electronic magazines that study ethnobotanical studies can improve student learning outcomes. Therefore, there is a need for efforts to preserve medicinal plants and efforts to document information from the public about the use of plants to support human life. One way that can be done for this documentation is through ethnobotanical studies of medicinal plants by making a herbarium. Herbarium is a collection of specimens preserved or dried and arranged according to a classification system ([Hafida et al., 2020](#)). According to ([Silalahi et al., 2018](#)), an ethnobotanical approach to medicinal plants in various communities (*cross-cultural studies*) can be used to find new drugs and bioactive compounds. Therefore, this ethnobotanical research must continue to be carried out in various regions of Indonesia.

Research on ethnobotany has been conducted in regions such as Central Sulawesi, Aceh, North Sumatra, South Sumatra, Bali, and Riau. The result of this research is different. The number and type of plants obtained depend highly on the potential in the area studied. Research on medicinal plants in the Kayuara Sakti Village area, Gunung Megang District, Muara Enim Regency, South Sumatra, has never been conducted. Thus, there needs to be more information regarding using plants as medication. Therefore, researchers took the initiative to conduct an "Ethnobotany study of potential and utilization of medicinal plants by local communities in Muara Enim Regency, South Sumatera" study.

Based on the above background, the following are the objectives of this study: 1). Know the types of plants used in traditional medicine, 2). Knowing how to process plants in traditional medicine, 3). Know how to use plants as traditional medicine, 4). Knowing the species use value (*UV*) of plants used as traditional medicine.

METHOD

The type of research on this subject is exploratory descriptive. This study's population comes from communities and plants in Kayuara Sakti Village, Gunung Megang District, Muara Enim

Regency. *Purposive sampling* is a sampling technique used in this study. The samples in this study were the types of medicinal plants used by correspondents. *The Corespondens* in this study consisted of 49 people from Kayuara Sakti Village who were experienced in traditional medicine, were 30 years old, and used medicinal plants.

Interviews, observations, and documentation used data collection techniques. The instruments in this study are interview sheets, observation sheets, stationery, and cell phones/cameras. Interview and observation sheets contain daily questions about plants used as medicine by the local community in Kayuara Sakti Village. Data analysis is carried out using qualitative and quantitative techniques. Qualitative analysis is carried out to describe the types of medicinal plants, the parts of plants used as medicine, how they are processed and used, and the types of diseases treated with these plants descriptively in a table. Quantitative analysis is used to determine the percentage and value of use *value (UV)* with the formula:

Percentage of families of medicinal plants used.

$$X = \frac{\sum \text{Spesies number in family}}{\sum \text{total number of the species}} \times 100\% \quad (1)$$

1. The percentage of the share of medicinal herbs used:

$$X = \frac{\sum \text{Total organ}}{\sum \text{the total number of organs used}} \times 100\% \quad (2)$$

2. Percentage of types of diseases treated:

$$X = \frac{\sum \text{number of types of disease treated}}{\sum \text{the total number of types of disease}} \times 100\% \quad (3)$$

3. Percentage of processing methods of medicinal plants used:

$$X = \frac{\sum \text{number of processing methods}}{\sum \text{total number of processing method}} \times 100\% \quad (4)$$

4. Percentage of how to use medicinal herbs used:

$$X = \frac{\sum \text{number of applications}}{\sum \text{total number of applications}} \times 100\% \quad (5)$$

5. *Species Value of Use Value (UV)* $SUV = \sum \frac{U_i}{N}$ (6)

Description:

U_i: The number of informants who know or use a particular plant species.

N: The overall number of informants.

If the UV value has been obtained, it is determined which plant has the highest and lowest values.

Description: * highest UV value

** lowest UV value

RESULTS AND DISCUSSION

A. Varieties of Medicinal Plants Utilized by the Local Community in the Village of Kayuara Sakti

The research results were done by interviewing 49 respondents, including those at least 30 years old, who use plants as medicine, and who are familiar with traditional medicine. The types of medicinal plants the local communities use is shown in Figure 1. The proportion of these medicinal plant families totals 100 plant species and 50 families.

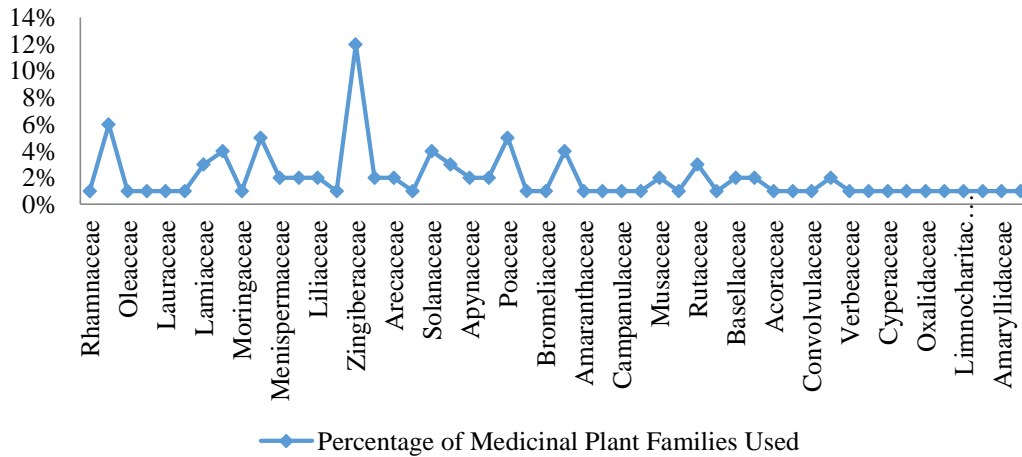


Figure 1. Percentage Graph of Medicinal Plant Families Used

The local community often treats Seventy diseases using medicinal plants in the village. The percentage of the types of diseases treated by local communities can be seen in Figure 2.

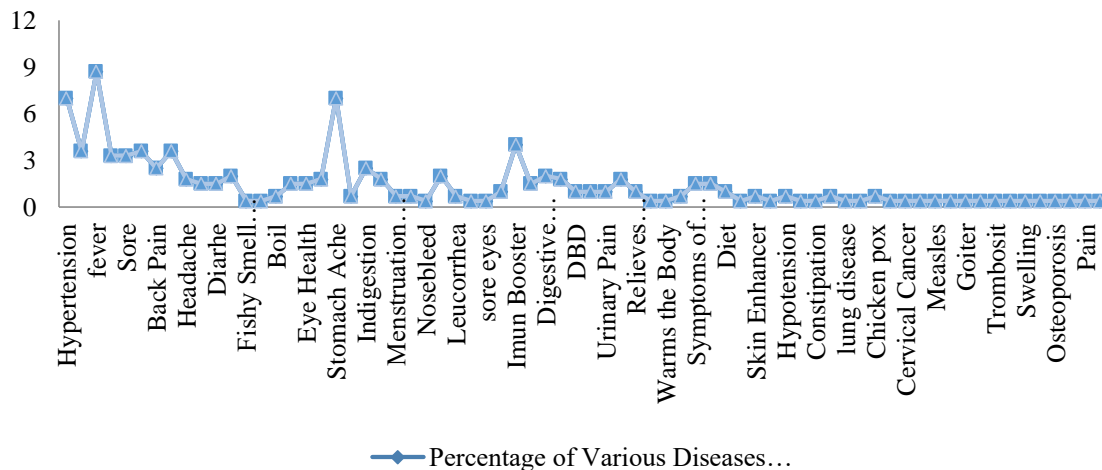




















Figure 2. Percentage of various diseases treated by local medicine.

All parts of plants can be used as medicine, but there are also some plants that only certain parts can be used as medicine. Based on the study results, examples of plant parts that can be used as medicine can be seen in Table 1.

Table 1. Plant Parts Used as Medicine by Local Communities in Kayuara Sakti Village

No.	Name of Plant	Family	Types of Disease	Parts Used	Plant Picture	
					Picture	Herbarium
1.	Antuali/ Brotowali (<i>Tinospora cordifolia</i> Hook.F. & Thomso)	Menispermaceae	<ul style="list-style-type: none"> •Fever •Malaria •DBD •Diabetes •Aches 	Trunk (Boiled and then drunk)		

No.	Name of Plant	Family	Types of Disease	Parts Used	Plant Picture	
					Picture	Herbarium
2.	Jarak <i>(Jatropha curcas L.)</i>	Euphorbiaceae	<ul style="list-style-type: none"> • Rheumatism • Bloating • Goiter 	Leaf (Pounded/ Mashed add some salt and kneaded)		
3.	Duwet/ Jamblang/ Jambu Keling <i>(Syzygium cumini (Linn.) Skeels.)</i>	Myrtaceae	<ul style="list-style-type: none"> • stomach ache 	Bark of the trunk (Bolied and then drunk)	 	
4.	Kunyit <i>(Curcuma longa L.)</i>	Zingiberaceae	<ul style="list-style-type: none"> • Fever • Indigestion • Cold and cough • Anemia • stomachache 	Rhizome (Bolied/ shredded then squeezed, mixed with salt & brown sugar or honey, and then drink) (The second way is brewed, but dried first and then drunk)	 	
5.	Patah Tulang <i>(Euphorbia tirucalli L.)</i>	Euphorbiaceae	<ul style="list-style-type: none"> • Warts • Toothache 	Sap (Without treatment, i.e., by cutting the stem and then taking the sap)	 	

No.	Name of Plant	Family	Types of Disease	Parts Used	Plant Picture	
					Picture	Herbarium
6.	Bunga Ungu/ Bandotan (<i>Ageratum conyzoides</i> L.)	Asteraceae/ Compositae	<ul style="list-style-type: none"> • Diarhea • Wound medicine • Hypertension • Fever 	Leaf and flower (boiled and then drunk) (The second way is mashed/pounded and then pasted)	 	
7.	Bunga Air Mata Pengantin/ Bunga Zinnia (<i>Zinnia elegans</i> Jacq.)	Asteraceae/ Compositae	<ul style="list-style-type: none"> • Hepatitis • Boil • Itching 	All parts of plant (Boiled and then drunk, and purified/pounded and then applied)		

The leaf part is part of the plant most widely used as medicine by the local community. The percentage of plant parts that can be used as medicine can be seen as follows in Figure 3.

B. How to Process Plants Used as Medicine by Local Communities in Kayuara Sakti Village

Processing plants were used as medicine must be concocted first. Some plants must be added with other ingredients such as water, salt, honey, brown sugar, palm sugar, rice, tamarind, pepper, and eucalyptus oil. The percentage of plant processing methods used in medicine can be seen as follows in Figure 4.

C. How to Use Plants Used as Medicine by Local Communities in Kayuara Sakti Village

How to use the plant as medicine in the community in ten ways is similar to the general one. The percentage of how to use medicinal plants used can be seen in Figure 5.

The Part of Plant Used for Medicine

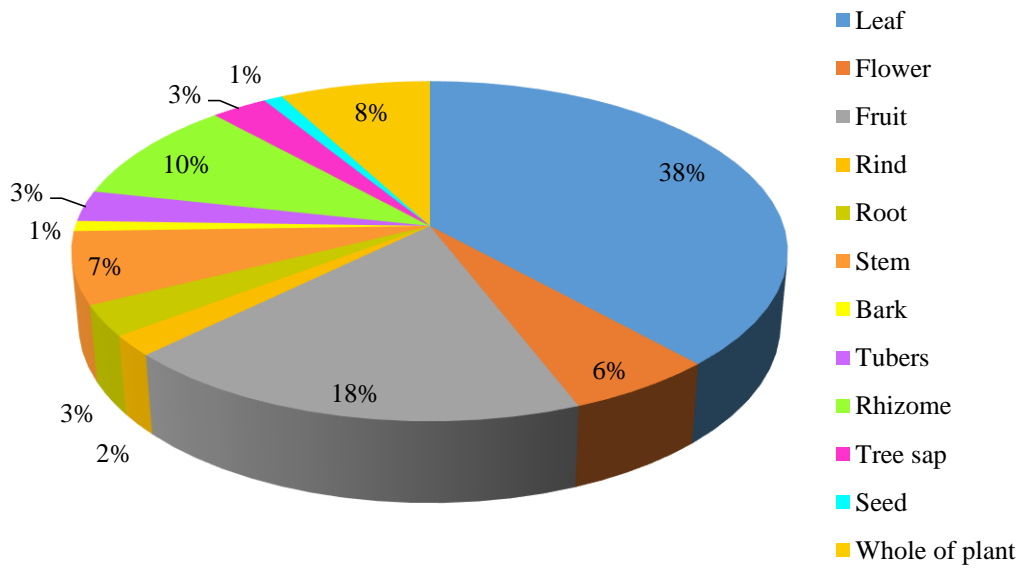


Figure 3. Percentage chart of The Share of Medicinal Plants Used

Utilized Processing Methods for Medicinal Plants

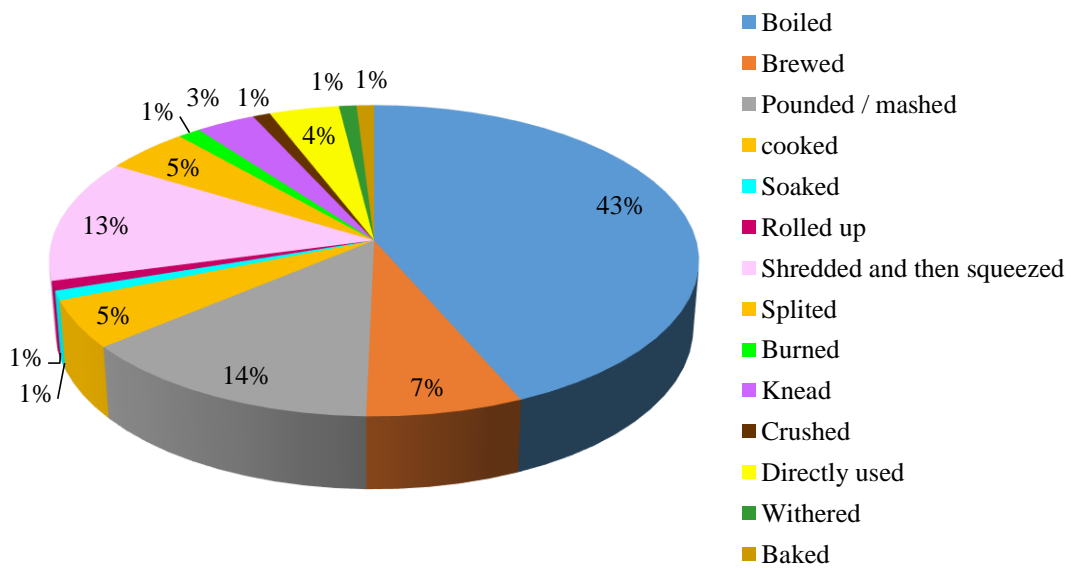


Figure 4. Percentage Chart of Processing Methods of Medicinal Plants Used

Percentage of How to use Medicinal Plants

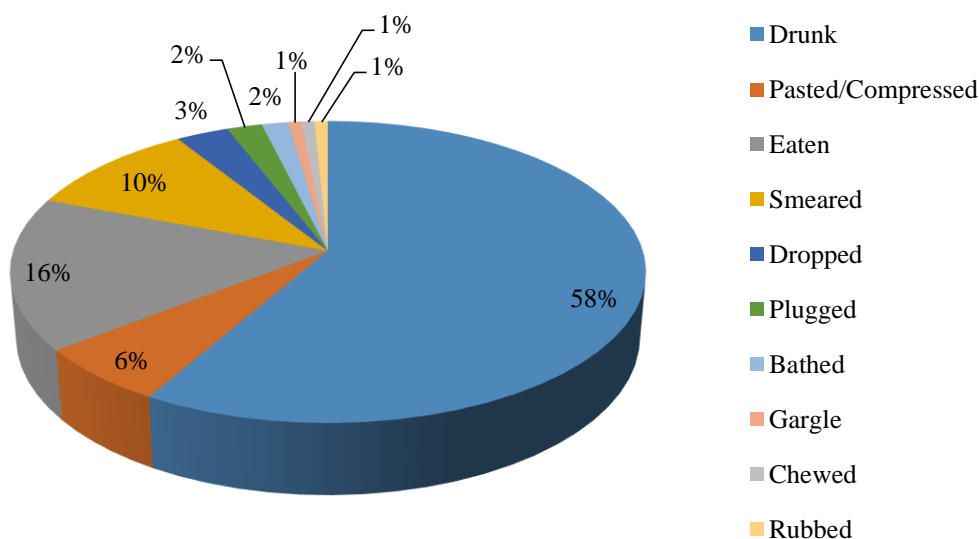


Figure 5. Percentage Chart of How to Use Medicinal Plants Used

D. Species Use Value (UV) of Plants used as Medicine by Local Communities in Kayuara Sakti Village

Plant species have different usability or UV values. The plant species with the highest UV value shows that it has known for its efficacy by many people and is most often used as a medicine. Meanwhile, the species with the lowest UV value indicate that the species is still rarely used as a medicine. The types of plants with the highest and lowest UV values can be seen in Table 2.

Tabel 2. The Use Value (UV) of Plants Used as Medicine by Local Communities in Kayuara Sakti Village

No.	Plant Name Scientific Name	Local Name	Habitus	Cultural Status	Species Use Value (UV)
Zingiberaceae					
1.	<i>Curcuma longa</i> L.	Kunir/Kunyit	Herbs	Cultivation	0,81**
Myrtaceae					
2.	<i>Syzigium cumini</i> (Linn.) Skeels.	Duwet/Jamblang/Jambu Keling	Tree	Cultivation	0,02*
Famili Araceae					
3.	<i>Alocasia plumbea</i>	Keladi Hitam	Herbs	Cultivation	0,02*
M Famili Solanaceae					
4.	<i>Datura metel</i> L.	Kecubung Hitam	Shurb	Cultivation	0,02*
5.	<i>Solanum lycopersicum</i> L.	Tomat	Bush	Cultivation	0,02*
Famili Bombacaceae					
6.	<i>Musa acuminata</i>	Pisang Kepok	Herbs	Cultivation	0,02*
7.	<i>Musa paradisiaca</i> L.	Pisang Putri/Pisang Susu	Herbs	Cultivation	0,02*
Famili Rutaceae					
8.	<i>Citrofortunella microcarpa</i> Bunge.	Jeruk Kasturi/Jeruk Kalamansi	Shurb	Cultivation	0,02*

No.	Plant Name		Habitus	Cultural Status	Species Use Value (UV)
	Scientific Name	Local Name			
Famili Loranthaceae / Malvaceae					
9.	<i>Hibiscus rosa-sinensis</i> L.	Kembang Sepatu	Shurb	Cultivation	0,02*
Famili Convolvulaceae					
10.	<i>Ipomoea batatas</i> (L.) Lam	Besile Kuning/Ubi Rambat Kuning	Herba	Cultivation	0,02*
Famili Limnocharitaceae					
11.	<i>Limnocharitaceae flava</i> (L.) Buch.	Genjer	Herbs	Wild	0,02*

Description: * Lowest UV
 ** Highest UV

E. Types of Plants Used as Medicine by Local Communities in Kayuara Sakti Village

The community is still very close to plants; most prioritize using plants as medicine. In addition to the limitations of distant hospitals and medical devices in this village, people also believe that using traditional medicines does not require expensive costs and is safer to consume. After all, it does not contain chemicals, so it does not have harmful side effects as long as it is still in the correct dosage and used. These medicinal plants are also easily obtained from their cultivation or growing wild in the yard or garden or directly taken from natural habitats such as forests. People learn about this traditional medicine from generations of parents or healers, but some learn from reading books or other information such as training and seminars. The community is aware of the importance of healthy living, and the dependence of the people here on the medicinal plants around them is very high. Shown from the number of medicinal plant species found in the village, they make efforts by continuing to preserve medicinal plants so that they continue to survive to the next generation, not only orally.

Based on the data in Figure 1. It can be known that 100 species of medicinal plants are included in the 50 families mandated by the local community. The results of the research obtained are not much different from the results of research conducted by [Setiawan & Oiptiyah \(2014\)](#), namely showing that there are 124 types of plants identified in the Rawah Aopa Watumohai National Park area, including 68 types of food sources, 65 types for medicines and ten types for indigenous interests. Likewise, the results of research conducted by [Simanjuntak \(2016\)](#), namely by using the experimental survey method, showed that in the Simalungun area of North Sumatra Province, 92 types of medicinal plants were identified consisting of 28 Orders and 45 Families. Therefore, it can be concluded that each region has a lot of potential plants from various families that can be used as medicine. The plant family most widely used as medicine by the community in Kayuara Sakti Village is from the *Zingiberaceae* family of 12%, such as *kunyit* (tumeric), *kencur* (aromatic ginger), *temulawak* (curcuma), *jahe* (ginger), *bangle* (*Zingiber cassumunar*), *laos* (galangal), *lempuyang*, *kunci* (Fingerroot), and *serei* (lemongrass) because these plants are found in this village. In comparison, the plant family that is least used as a medicine is 1%, consisting of the families *Rhamnaceae*, *Oleaceae*, *Annonaceae*, *Lauraceae*, *Acanthaceae*, *Moringaceae*, *Thymelaeaceae*, *Araceae*, *Sapotaceae*, *Bromeliaaceae*, *Amaranthaceae*, *Papilionaceae*, *Campanulaceae*,

Bombacaceae, Araliaceae, Punicaceae, Acoraceae, Crasulaceae, Convolvulaceae, Verbeaceae, Mimosaceae, Cyperaceae, Fabaceae, Oxalidaceae, Muntingiaceae, Limnocharitaceae, Phyllanthaceae, Amaryllidaceae, and Alliaceae, such as *bidara* (jujube), *sirsak* (soursop), *Bunga melati* (jasmine), *keji beling* (*crispa*), and *alpukat* (avocado). It is known from how much public knowledge about plants can be used as medicine.

Based on the data in figure 4 from interviews with the community, 70 diseases can be treated using medicinal plants found in Kayuara Sakti Village. Researchers [Oktavaia et al. \(2017\)](#), in the Lake Buyan-Tamblingan area, Bali, documented 69 medicinal plants belonging to 59 clans and 36 tribes, showing a similar result. The diversity of diseases that can be treated with plants is documented in as many as 37 diseases, including rheumatism, heartiness, aches, and headaches, the most widely expressed minor diseases by the surrounding community. Likewise, the research results in Kayuara Sakti Village are similar. The community revealed that the diseases that are often treated are diseases that are commonly suffered by the community, such as fever, cold cough, wounds, headaches, lumbago, abdominal pain, toothache, malaria, DHF, soreness, swelling, sprains, hives, flatulence, rheumatism, smallpox, measles, laryngitis, warts, boils, foot pain, diarrhea, ulcer, ambient, nosebleeds, vaginal discharge, sore eyes, internal heat, urinary pain, constipation, cold and fever, thick white tongue, relieve pain during menstruation, launch the digestive system, improve blood circulation, improve the immune system, and so on. However, people also often use it to treat diseases that may be considered severe, such as hypertension (high blood pressure), hypotension (low blood pressure), cancer, cholesterol, diabetes, kidney stones, urinary stones, hepatitis, gout, stomach, lungs, prostate, tumors, goiter, leukocytosis, hyperglycemia (high sugar), osteoporosis, bowel cancer, breast cancer, uterine cancer, and so on. dan sebagainya.

Based on Figure 2, we can see that the disease with the highest percentage value is fever, which shows that local people in Kayuara Sakti Village often experience the disease. This statement also aligns with the calculation of the use value (use value) that the plant with the highest UV value is turmeric. From the results of interviews with the community, one of the benefits of turmeric plants is fever medicine, so this conclusion can be drawn following the results obtained such as in the field that the plant that has the highest UV value is turmeric as a fever medicine which is a disease often experienced by local people in Kayuara Sakti Village.

Based on the data in Figure 3. shows that plants can be used as medicine by utilizing all parts of the plant or only certain parts, such as leaves, flowers, fruits, stems, roots, bulbs, rhizomes, seeds, sap, and fruit skin or stem. From these data, the most widely used plant parts as medicine are the leaf part at 39%, followed by fruit at 19%, rhizome at 10%, all plant parts at 8%, stems at 7%, flowers at 6%, roots, tubers, and sap at 3%, fruit skin at 2%, while for the least used parts, namely the seed and stem bark at 1%. According to [Nurmalasari et al. \(2012\)](#), plants generally cannot be used as drugs if they do not contain bioactive compounds. Plant bioactive compounds are secondary metabolite compounds, such as flavonoids, alkaloids, saponins, steroids, terpenoids, polyphenols, etc.

The leaf part is most widely used for the manufacture of traditional medicine because this part is the easiest to get. People also believe the leaves have more nutrients than other parts and contain much water, around 70-80%, so the texture is soft. According to [Batlajery et al. \(2022\)](#), the leaves function as a place of accumulation of photosynthesis which is suspected of containing

elements (organic substances) that have elemental properties to cure diseases. Substances that are abundant in the leaves are essential oils, potassium compounds, phenols, and chlorophyll. One of them is chlorophyll which is a substance in green plants. This substance has the same function as hemoglobin in human blood, so it has been tested to overcome anemia well.

F. How to Process Plants Used as Medicine by Local Communities in Kayuara Sakti Village

Based on the data in Figure 4. shows that plants that will be used as medicine must be appropriately processed to be safe to use. Some medicines from this plant are processed in a way such as dried or often referred to as a simplifier because people make supplies when needed. Making medicine from plants also usually has a dose when mixing it, for example, boiling it with 2 cups of water until it shrinks to 1 glass. After that, it is immediately drunk. In addition, the tools used to process medicinal plants are kitchen utensils as usual, for example, when boiling, using a stainless pot, and using a teapot for cooking water. As for pounding or mashing plants using kneading, some are chopped using a knife and grated using grated coconut made of wood. Some people in the village already know and understand good tools to use when mixing or making medicines from these plants.

The method of processing plants used as medicine by the community, by boiling, has a percentage value of 44%. One example is *bidara* plants, by using several *bidara* leaves that have been washed clean, boiled with enough water, and filtered. The water is directly drunk for hypertension medicine. *Sambung nyawa* can also be utilizing a few leaves washed clean and then boiled with as much as 2 cups of water until it shrinks. The water becomes 1 cup and then filtered and can be drunk immediately. Another example is *kenikir* for cancer medicine by boiling the leaves after washing them thoroughly. Then after thinking that the leaves are cooked and not too soft, the leaves can be eaten immediately. In the brewed process, it has a percentage value of 7%, for example, connecting life for cholesterol and sore medicine by drying some of the leaves first. Then the dried leaves brew with warm water, such as making tea but not sugared. Another example is *Moringa*, a medicine for diabetes and gout. The way it is processed is the same as the *Sambung nyawa* plant.

The method of processing by ground or mashed, it has a percentage value of 14%. For example, purple flowers / *bandotan* can be used to heal wounds through several leaves after washing thoroughly and then pounding until they are thought to be smooth enough, then attached to the wounded area, *bridal tear* flowers for boils and itching medicine using some of the leaves are ground/smoothed after washing thoroughly then applied to boils or on itchy body parts.

Shredded and then squeezed have a percentage value of 13%. For example, from the *Zingiberaceae* family such as red ginger can be used for cold cough medicine and rheumatism utilizing the rhizome after cleaning and then grated then squeezed so that the water can be mixed with fine *sahang* (white pepper) and then drunk for other examples, namely turmeric for fever medicine, hypotension and improving the immune system by processing it the same as red ginger earlier. However, The water is mixed with salt and brown sugar or honey to taste and immediately drunk.

By cooking process, it has a percentage value of 5%; for example, *cempokak* eggplant for medicine to prevent eye pain, namely by washing the fruit thoroughly, then cooked as usual or

sautéed, and then after it is cooked, it can be eaten immediately. Another example is *beluntas* for flatulence medicine by processing the same as the eggplant then eating. By splitting process, it has a percentage value of 5%. For example, aloe vera for wound medicine by splitting the leaves to take the gel and then using the leaves directly applied to the injured part of the body. Without processing, it has a percentage value of 4%. For example, *petadin* stem for wound medicine using organ parts of this plant cut or broken only then taken sap and then directly applied to the injured part of the body. Another example is the *plumeria flower* was used as toothache medicine. In the same way as before, the sap is taken using a cotton swab and then directly corked or inserted into a teeth hole that hurts.

The kneading method has a percentage value of 3%, for example, *kapuk* or *randu* for fever medicine by kneading some leaves until the leaves are sufficiently crushed and slimy, then mixing with clean water ready to be compressed. Another example is that the *jarak* can cure bloating and goiter by kneading some of the leaves and then thought to be sufficiently crushed directly attached to the part of the abdomen or part of the body affected by goiter. The burned method has a percentage value of 2%. For example, *Dayak* onions for medicine to relieve pain during menstruation, utilizing by burning part of the tuber after it is cooked and then peeling and eating immediately, and another example is black sugarcane for medicine to clean the thick and white tongue by burning it first and then peeling it then chewing it directly to get the water.

While the least used plant processing method has a percentage value of 1%, including soaking, for example, jasmine flowers for eye health, namely by soaking the juice of the flowers for a while then dripping on the eyes, by rolling up, for example, green betel as a nosebleed medicine, namely using the leaves after cleaning, they are immediately rolled up and then plugged into the nostrils to relieve the blood that comes out. The method of processing plants by pressing lemongrass for toothache medicine through the stem after cleaning is pressed and mixed with water and salt to taste and then immediately gargled. Roasting, for example, *petai* as a medicine to release white blood cells after giving birth, namely by roasting the fruit directly. After it is cooked, it is opened and eaten immediately. Through being served, for example, *tunjung* for treating sole foot pain, utilizing the leaves being held with fire and then directly attached to the sore sole.

The results of this study are also in line with several studies carried out in various regions. The way of processing plants that are used in medicine, in general, has the same method. However, there are only a few differences. For example, based on the results of research in Kayuara Sakti Village, one species of medicinal plants can be processed in several ways, such as boiled, grated, without processing, or only brewed with hot water but based on several journals, the results of other studies say that one plant species is only used to processing it by boiling. We can see this in the research conducted by [Saputri et al. \(2021\)](#), one of the turmeric plants (*Curcuma longa* L.) can be used to treat tonsil disease and cough which is processed by boiling or grated rhizomes while from the results of research in Kayuara Sakti Village for turmeric can also be processed by brewing only the rhizome part. Likewise, ginger (*Zingiber officinale* Roscoe.) can be processed by boiling, pounding, or grated and then squeezed. However, from the research results in Kayuara Sakti Village, ginger can also be processed by burning, brewing, drying, and then brewing with hot water. Based on research in Kayuara Sakti Village, to treat stone urine, you can use liman tread grass (*Ellephantopus scaber* L.), which is processed by boiling. In contrast, according to [Nasution et al. \(2021\)](#), tapak liman grass can

also be processed by squeezing and adding a little water to treat coughs, and so can various other medicinal plants.

The processing method most often used by the community is boiling, which has a percentage value of 44%. Generally, the parts processed this way are leaves, roots, and plants whose fundamental parts are used. Examples of plants such as bidara (*Ziziphus mauritiana* Lam.), sambung nyawa (*Gynura procumbens* L.), sirsak (*Annona muricata* L.), keji beling (*Strobilanthes crispus* BI.), sambiloto (*Andrographis paniculata* Wall. ex Nees.), sungkai (*Peronema canescens*), kelor (*Moringa oleifera* Lamk.), beluntas (*Pluchea indica* (L.) Less.), rumput tapak liman (*Ellephantopus scaber* L.), rumput teki (*Cyperus rotundus* L.), meniran (*Phyllanthus niruri* Linn.), suruhan (*Peperomia pellucida* (L.)), binahong (*Anredera cordifolia* (Ten.) Steenis.), lalang (*Imperata cylindrica* (Linn.) Raeusch.), and so on. People also believe that by boiling, the content in plants will come out and immediately mix with boiled water and just drink it directly so that its properties will be more pronounced and can treat diseases both from inside and outside the body, in addition to killing germs contained in these plants. People still choose the traditional way of processing medicinal plants as they know so far because it is easier and does not require much cost. Besides that, it is also to preserve culture.

G. How to Use Plants Used as Medicine by Local Communities in Kayuara Sakti Village

Based on the data in Figure 5. shows that the way of using plants used as medicine by the community is similar. The most used method of use is by drinking. It has a percentage value of 57% it is because it also depends on the processing process. Generally, medicinal plants are more often boiled and directly drunk by the communities. Besides that, it is also simpler. The leaves, roots, and plants are usually where all parts are used. For example, such as binahong (*Anredera cordifolia* (Ten.) Steenis.) for uric acid and kidney stone medicine, utilizing some leaves after cleaning, boiling until cooked, then filtering before drinking. There are also examples of *kayu singgah* or benalu (*Loranthus* sp.) which grows on the lime tree (*Citrus aurantifolia* L.) as a cure for cancer and tumors, it is utilizing all parts of the plant as needed it is boiled with 2 cups of water until the water shrinks to 1 cup and then filter. The boiled water can be drunk immediately, as for other examples such as bidara (*Ziziphus mauritiana* Lam.), kumis kucing (*Orthosiphon aristatus* (Blume) Miq.), sambung nyawa (*Gynura procumbens* L.), sambiloto (*Andrographis paniculata* Wall. ex Nees.) and so on.

In addition, there are also several ways used by the community, namely by eating it has a percentage value of 16%, for example in the part of the plant fruit used so that it does not need to be processed first, the skin of the fruit remains peeled before being eaten such as papaya fruit (*Carica papaya* L.), banana (*Musa paradisiaca* L.) and so on. Besides that, some must be cooked first and then eaten, such as kenikir (*Cosmos caudatus* Kunth.) is a cancer drug through several leaves washed thoroughly then boiled until cooked and then can be eaten immediately. It can also be eaten with rice or other appropriate foods. Other examples of plants are beluntas (*Pluchea indica* (L.) Less.), unji (*Etligeria elatior* (Jack) R.M.Sm.), and so on. Applying it has a percentage value of 10%, for example, bridal tear flowers for itching medicine, namely by pounding the leaves and then directly applying to the itchy parts of the body, as for other examples of plants such as aloe vera (*Aloe vera* (L.) Burm.

F.), sambiloto (*Andrographis paniculata* Wall. ex Nees.), and so on. The way it is attached has a percentage value of 6%. For example, green betel is medicine for fever and cold cough using the leaves after cleaning without processing again only given eucalyptus oil then directly affixed to the head or forehead as for other examples of plants such as purple flowers (*Ageratum conyzoides* L.), castor (*Jatropha curcas* L.) and so on. In this way, it has a percentage value of 3%, for example, a jasmine flower (*Jasminum sambac* L.) and cataract flowers (*Isotoma longiflora* (L.) C. Presl.) It can be used for eye health by taking water from the flower's juice and directly dripping it on the eye.

The method of use utilizing by plugged has a percentage value of 2%. For example, green betel (*Piper batle* L.) leaves can be used as a nosebleed medicine, namely by rolling the leaves and then plugging them into the hole nose to inhibit the blood does not melt any more. The way bathed has a percentage value of 2%, for example, ciplukan (*Physalis angulata* Linn.) It can be used for fever and chickenpox medicine by boiling all parts of the plant and then letting it sit until the boiled water is not too hot. Then, it is only used for bath water. At the same time, the method of using medicinal plants with the most negligible percentage value of 1% is by gargling. For example, in lemongrass (*Cymbopogon citratus* Stapf.), the stem is pressed and given enough salt water, and then gargled can be used for toothache pain medicine. In the same way, chewing black sugarcane (*Saccharum officinarum* Linn.) It can be used for cough, fever, and thick tongue medicine. Burning sugarcane until it is ripe and then peeling off the skin before chewing. For example, lime (*Citrus aurantifolia* L.) can be used for headache medicine by splitting citrus fruits into two parts and then rubbing them evenly on the Tarpaulina. The results obtained align with research that has been widely carried out in various regions. One of them is a study that [Sri Eni et al. \(2019\)](#), which shows several ways of using medicinal plants by drinking, chewing, eating, and smearing. Rubbing is the most widely expressed way by the local community. Likewise with the research results conducted in Kayuara Sakti Village, how people use plants as medicine is the same.

How to use medical plants depends on how the plant is processed. This result aligns with the research results carried out in various regions. Using plants as medicine compared to the results of several research journals is different but generally has the same method. The number of known methods of using medicinal plants depends on the many potential plants in the area. One of the influencing factors is that the geographical conditions in each region are different, for example, temperature, weather, and climate, so each region has a different number of plant species. The method of use is seen from how the plant is processed and its benefits, such as the *sirih hijau* plant (*Piper batle* L.), according to [Wahyuni et al. \(2021\)](#), used for leucorrhoea by sprinkling or bathing. Meanwhile based on research in Kayuara Sakti Village, how to use *sirih hijau* (*Piper batle* L.) can be done in various ways, not only by sprinkling or bathing but also by boiling it and then drinking it for cough medicine. For stomach aches, it can be used immediately, only adding eucalyptus oil and then attaching it to belly. *Kelor* (*Moringa oleifera* Lamk.) can treat diabetes, hypertension, and cholesterol by boiling or brewing it and then drinking it. According to [Megawati et al. \(2016\)](#), lime (*Citrus aurantifolia* L.) is used to treat wounds caused by sharp objects by dripping water from the fruit, while from the results of research in Kayuara Sakti Village, lime is used by drinking it or rubbing it on the head for cough and headache medicine and so on.

H. Species Use Value (UV) of Plants Used as Medicine by Local Communities in Kayuara Sakti Village

Based on data from Table 2. it shows that plant species that have the highest *use value* (UV) 5 species belong to 2 families, namely turmeric plants (*Curcuma domestica* Val.) of 0.81, white ginger (*Zingiber officinale* Rosc.) by 0.71, kencur (*Kaempferia galangal* L.) and temulawak (*C. xanthorrhiza* Roxb.) of 0.55 of the family *Zingiberaceae*, and Kumis Kucing (*Orthosiphon aristatus* (Blume) Miq.) of 0.55 of the family *Lamiaceae*. This plant, which has a high UV value, shows that the species is recognized by most people and is most often used as a medicine, and the public more widely knows its properties. In addition, this plant species is a species that is easy to find in the surrounding environment because besides being used as medicine, this species is also used as a spice in cooking, so most people have cultivated it in their yards.

While the plant species that have the lowest *use value* (UV) with a value of 0.02, 10 plant species belong to 8 families, including the Kasturi orange plant (*Citrofortunella microcarpa*) from the *Rutaceae* family, the black tuber (*Alocasia plimbeaa*) from the *Araceae* family, hibiscus (*Hibiscus rosa-sinensis* L.) from the *Loranthaceae* family, black amethyst (*Datura fastuosa*) and tomato (*Solanum lycopersicum* L.) of the family *Solanaceae*, duwet/jamblang (*Syzigium cumini* (Linn.) Skeels.) from the family *Myrtaceae*, princess banana/milk banana (*Moses paradisiaca* L.) and coco banana (*M. acuminata*) of the family *Musaceae*, yellow sweet potato (*Ipomea batatas* (L.) Lam.) of the family *Convolvulaceae*, and genjer (*Limnocharitaceae flava* (L.) of the family *Limnocharitaceae*. This plant, which has low UV value, shows that the species is least used and has been recognized by the public, but only some know its medicinal properties. In addition, this species with a low UV value is partly wild.

The research results obtained are in line with the results of research conducted by [Pelokang et al. \(2018\)](#) on the Madurese community in the Ijen Bondowoso area, namely the plant that has the highest UV value is turmeric (*Curcuma domestica* Val.) of 0.94 which is considered an essential plant while the Plants considered as less important or having the lowest UV value are *buni* (*Antidesma bunius* L.), *jeringau* (*Acorus calamus* L.), *kapas* (*Gossypium arboreum* L.), *kastuba* (*Euphorbia pulcherrima* Willd. ex Klotzs.), *pisang susu* (*Musa paradisiaca* L.), and lemon grass (*Cymbopogon citratus* (DC.) Stapf.) which is 0.03. Because we can conclude that in each region, there are indeed many potential medicinal plants that are different, but in terms of their use as medicine, if we look at it based on the calculation of the UV value, it is clear that people's knowledge about medicinal plants used in everyday life can be said to have value. Conversely, Communities that maintain traditional culture like this help conserve natural resources in each area ([Sutrisno et al., 2020](#)). One example is consuming herbal medicine, an ingredient for traditional medicine that has long been a tradition in Indonesia ([Wulantresna et al., 2021](#)). Consuming herbal medicine is very good for health because it is made from herbal ingredients, but it must be done at the correct dosage/dose and not excessive so that the benefits are also good for the body ([Suparmi et al., 2021](#)).

CONCLUSION

Studi Study ethnobotany potential and utilization of medicinal plants by local communities in Kayuara Sakti Village, Muara Enim Regency; 100 species belong to 50 families. Parts of plants that

society frequently uses are leaves, flowers, fruits, stems, roots, bulbs, rhizomes, seeds, sap, fruit peels or stems, and all parts of plants.

The technique of processing plants used as medicine by the local community in Kayuara Sakti Village is boiled (44%), brewed (7%), ground / mashed (14%), grated, and then squeezed (13%), cooked, and splitted (5%), without processing (4%), kneaded (3%), burned (2%), soaked, rolled, pressed, baked, and served (1%).

The local community of Kayuara Sakti Village uses medicinal plants in the following ways: ingested (57%), applied (10%), pasted (6%), dripped (3%), corked and bathed (2%), gargled, chewed, and massaged (1%).

Turmeric (*Curcuma domestica* Val.) is one of the plants with the most significant use value (UV) (0.81). Ten plant species have the lowest value of 0.02, namely *jeruk kasturi* (*Citrofortunella microcarpa* Bunge.), *keladi hitam* (*Alocasia plumbea*), *kembang sepatu* (*Hibiscus rosa-sinensis* L.), *kecubung hitam* (*Datura metel* L.), tomat (*Solanum lycopersicum* L.), *duwet* (*Syzigium cumini* (Linn.) Skeels.), *pisang putri* (*Moses paradisiaca* L.), *pisang kepok* (*Musa acuminata*), *ubi jalar kuning* (*Ipomoea batatas* (L.) Lam.), and genjer (*Limnocharitaceae flava* (L.) Buch.).

REFERENCES

- Batlajery, Y., Hiariej, A., & Sahertian, D. E. (2022). Kajian Etnobotani Tumbuhan Obat Pada Masyarakat Desa Watmuri Kecamatan Nirunmas Kabupaten Kepulauan Tanimbar. *Jurnal Biologi Science & Education*, 11(1), 1–18. <https://doi.org/http://dx.doi.org/10.33477/bs.v11i1.2521>
- Hafida, S. H. N., Ariandi, A. P., Ismiyatin, L., Wulandari, D. A., Reygina, N., Setyaningsih, T., Setyawati, L., Sochiba, S. L., & Amin, M. A. K. (2020). Pengenalan Etnobotani melalui Pembuatan Herbarium Kering di Lingkungan Sekolah MI Muhammadiyah Plumbon, Wonogiri. *Buletin KKN Pendidikan*, 2(2), 79–83. <https://doi.org/10.23917/bkkndik.v2i2.10776>
- Hastiana, Y., Rusdy A. Siroj; &, & Irma. (2021). Development of Electronic Magazine Teaching Materials for Key Determination and Cladograms in Ethnobotany and Phytochemical Studies. *Bioeduscience*, 5(2), 131–136. <https://doi.org/10.22236/j.bes/526787>
- Megawati, Anam, S., & Pitopang, R. (2016). Studi Etnobotani Tumbuhan Obat Pada Masyarakat Suku Kaili Ija Di Desa Bora Kecamatan Sigi Biromaru Kabupaten Sigi Sulawesi Tengah. *Biocelbes*, Vol. 10(No. 1), 76–90.
- Nasution, W., Lubis, N., Cikita, B., Zendrato, L., & Silaban, S. R. (2021). Uji Aktivitas Antibakteri Ekstrak Etanol Daun Tapak Liman (*Elephantopus Scaber* L) Terhadap Bakteri *Shigella Dysenteriae* Dengan Metode Difusi Cakram. *Biospecies*, 14(1), 18–23. <https://doi.org/https://doi.org/10.22437/biospecies.v14i1.11235>
- Nurmalasari, N., Sukarsa, S., & Hidayah, H. A. (2012). Studi Kasus Pemanfaatan Tumbuhan Sebagai Obat-Obatan Tradisional Oleh Masyarakat Adat Kampung Naga Di Kabupaten Tasikmalaya. *Majalah Ilmiah Biologi BIOSFERA: A Scientific Journal*, 29(3), 141–150. <https://journal.bio.unsoed.ac.id/index.php/biosfera/article/view/250>
- Oktavaia, G. A. E., Darma, I. D. P., & Sujarwo, W. (2017). Studi Etnobotani Tumbuhan Obat di Kawasan Sekitar Danau Buyan-Tamblingan Bali. *Buletin Kebun Raya*, 20(1), 1–16. <https://doi.org/https://doi.org/10.14203/bkr.voio.235>
- Pelokang, C. Y., Koneri, R., & Katili, D. (2018). Pemanfaatan Tumbuhan Obat Tradisional oleh Etnis Sangihe di Kepulauan Sangihe Bagian Selatan, Sulawesi Utara (The Usage of Traditional

- Medicinal Plants by Sangihe Ethnic in the Southern Sangihe Islands, North Sulawesi). *Jurnal Bios Logos*, 8(2), 45. <https://doi.org/10.35799/jbl.8.2.2018.21446>
- Saputri, D., Walascha, A., Putri, A. E., Rahmawati, A., Ramadhani, K., Triana, B., Wulandari, P., Khairiah, A., Priyanti, & Des, M. (2021). Etnobotani Tumbuhan Obat di Desa Serkung Biji Asri, Kecamatan Kelumbayan Barat, Kabupaten Tanggamus, Lampung. *Prosiding SEMNAS BIO*, 1, 225–240. <https://doi.org/https://doi.org/10.24036/prosemnasbio/vol1/34>
- Setiawan, H., & Qiptiyah, M. (2014). Kajian Etnobotani Masyarakat Adat Suku Moronene Di Taman Nasional Rawa Aopa Watumohai. *Jurnal Penelitian Kehutanan Wallacea*, 3(2), 107. <https://doi.org/10.18330/jwallacea.2014.vol3iss2pp107-117>
- Silalahi, M., Walujo, E. B., Mustaqim, W., Biologi, P. P., Biologi, D., & Botani, D. (2018). *Etnomedisin SumUt*. 19(2), 77–92. <https://doi.org/https://doi.org/10.19184/jid.v19i2.7017>
- Simanjuntak, H. A. (2016). Etnobotani Tumbuhan Obat Di Masyarakat Etnis Simalungun Kabupaten Simalungun Provinsi Sumatera Utara. *BIOLINK (Jurnal Biologi Lingkungan, Industri, Kesehatan)*, 3(Vol 3, No 1 (2016): Agustus), 75–80. <http://ojs.uma.ac.id/index.php/biolink/article/view/814>
- Sri Eni, N. N., Sukenti, K., Aida, M., & Rohyani, I. S. (2019). Studi Etnobotani Tumbuhan Obat Masyarakat Komunitas Hindu Desa Jagaraga, Kabupaten Lombok Barat, Nusa Tenggara Barat. *Biotropika: Journal of Tropical Biology*, 7(3), 121–128. <https://doi.org/10.21776/ub.biotropika.2019.007.03-5>
- Suparmi, S., Wahidin, D., & Rietjens, I. M. C. M. (2021). Risk characterisation of constituents present in jamu to promote its safe use. *Critical Reviews in Toxicology*, 51(2), 183–191. <https://doi.org/10.1080/10408444.2021.1912708>
- Sutrisno, I. H., Akob, B., Navia, Z. I., Nuraini, & Suwardi, A. B. (2020). Documentation of ritual plants used among the aceh tribe in Peureulak, East Aceh District, Indonesia. *Biodiversitas*, 21(11), 4990–4998. <https://doi.org/10.13057/biodiv/d211102>
- Wahyuni, S., Taufik, L., & Mustariani, B. A. A. (2021). Uji Karakteristik Sediaan Masker Gel Peel-Off Berbahan Dasar Ekstrak Daun Kelor (*Moringa oleifera*) dan Madu Hutan Terhadap Kualitas Kulit Wajah. *SPIN: Jurnal Kimia & Pendidikan Kimia*, 3(2), 165–176. <https://doi.org/10.20414/spin.v3i2.3909>
- Wulantresna, D., Zuhrotun, A., & Chaerunisa, A. Y. (2021). Herbal Potential In Indonesia For Adjuvant Therapy To Corona Virus-19 Disease. *European Journal of Molecular & Clinical Medicine*, 7(10), 1696–1707. https://ejmcm.com/article_6775.html%0Ahttps://ejmcm.com/pdf_6775_747d799c6e50e5e5f937d56f0dc8a6dc.html