



Identification of Medicinal Plant Potential of Kasiyan Village Puger District

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Abstract

Background: Indonesia is a country that has many types of plants, one of which is medicinal plants, Kasiyan Village is a village located in the Puger district, Jember district. This village grows a lot of plants that are used as medicine by the local community. This study aims to identify the types of medicinal plants part of the population. As well as how to use it by the people of Kasiyan Village, it is hoped that this can enrich biology learning resources packaged in booklets. **Methods:** Qualitative descriptive research, using a survey method with purposive sampling and interviews to collect data. **Results:** There are 47 species of medicinal plants from 25 families found in the family Euphorbiaceae. The plant part that is widely used is the leaf part, with a percentage of 40%, while process plants that are often used are boiled with a percentage of 29%. **Conclusions:** Medicinal plants have properties that can be used as a treatment of diseases, considering the many properties obtained from this medicinal plant for the body, not only that this medicinal plant is more natural and more efficient.

Keywords: Kasiyan village, Puger district; identification; medicinal plants



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Introduction

Indonesia is a country that has a lot of nicknames, one of which is dubbed the Mother of Species because it has a very high species diversity (Nuraini et al., 2021). This cannot be separated from Indonesia's tropical climate and balanced rainfall intensity because it is on the equator and is at the confluence between tectonic plates. Hence, various species are easy to grow in Indonesia, especially plants estimated to be about 20,000 species. About 40% are native plants from Indonesia, and nearly 7,500 plant species are used as medicinal plants (Kusmana & Hikmat, 2015).

Based on the Decree of the Minister of Health number HK.02.02/IV.2243/2020 regarding the use of traditional plants as medicine to maintain health prevent disease, and care for the health of the body. From the letter, we can understand the importance of preserving immunity and preventing diseases, especially during the COVID-19 pandemic. Now, We are more recommended to consume medicinal plants or traditional ones because these drugs are easier to get it. The processing is more affordable, and of course, the medicine is more herbal and safe and does not contain many chemical compounds that can be harmful to the body (Kementerian Kesehatan, 2020).

Medicinal plants contain certain efficacious substances, especially in the field of health. These medicinal plants have been used by people and have been passed down through generations (Lesmana et al., 2018). Dewi et al. (2017) also mentioned Indonesia is a country that already has services in the field of health that has developed and modern. However, some of its people still use traditional plants.

Kasiyan Village is located in Puger district of Jember regency. This village is located about 7 km from the center of Puger subdistrict. Kasiyan village is a large and fertile lowland area with an average temperature of 23° C - 30°C (Anonymous, 2020). In this village, there are various types of plant species that grow, especially plants that can be used as medicine, and this plant has been known even to be used as a cure for diseases by the local community, which has been carried out for generations using its diverse utilization ranging from rhizomes, roots, stems, fruit, seeds to leaves with various processing as well. This is also in line with Safitri et al. (2015), which mentions that medicinal plants can be used, ranging from seeds, roots, stems, rhizomes, leaves, and all parts. Medicinal plants can prevent disease and can also be used as a cure for internal conditions and external diseases (Hariana, 2013).

Some people in Kasiyan village, especially elders or tips, use more medicinal plants than buying in pharmacies because they think this medicine is more natural and friendly to bag. The plants are easy to grow, even in humid places. This plant grows a lot in the yard because the plant is often used by some people, especially the advice or elders in this Kasiyan village, so this medicinal plant becomes a choice.

The current community has rarely used the plant for treatment, and some people do not know the plants with health benefits, only the admonitions or elders who still use the medicinal garden. Therefore, plants that are efficacious in the drug need to be excavated and redeveloped, considering the many benefits obtained from the existence of these medicinal plants for health (Wijayakusuma, 2000; Yonaka & Dani, 2019).

Based on the problems, it is necessary to introduce medicinal plants to the community and students. The lack of learning resources and their knowledge of medicinal plants is still limited, so there is a need for supporting books that can be used to help study the classification of living things. This classification material is a class X Biology material in high school (SMA). It introduces medicinal plants, which have various health benefits and are closely related to everyday life (Anshori & Martono, 2009).

The source of learning referred to here is Booklet. A booklet is an attractive small book in which there are interestingly packaged pictures and writings that can be used as a medium that facilitates or clarifies the purpose of the product (Rehusisma et al., 2017). Booklets can be used as a learning medium for students because they are attractive. Students are more enthusiastic about learning it so that learning is easier to achieve the target. Research results from Pralisaputri et al. (2016) Booklet is a medium for effective and efficient learning, containing important news, uniquely made, clear and practical to understand for classroom learning activities in increasing the effectiveness of student learning. Based on Sari (2017); Bai (2019), Booklet has several benefits as a learning medium, namely delivering a lot of news, helping students understand the learning process, and impacting local potential as a learning resource and teaching materials.

Therefore, this study aims to determine the types of medicinal plants, the parts used, and how to process medicinal plants used by Kasiyan Village, Puger Subdistrict, by inventorying knowledge about medicinal plants in the surrounding environment to stay awake.

Metode

The research used is descriptive and qualitative. The sample and population in this study were medicinal plants found in Dusun Krajan 01 Karang Genting, East Kasiyan Village. Measuring tools with semi-structured interviews and the results is a document in photos of medicinal plants found, then the data obtained are analyzed descriptively (Khoiriyah et al., 2020).

Purposive sampling is a technique used in sampling, with the number of samples set by five representative respondents. A total of ± 150 houses with the criteria of respondents being natives, respondents having knowledge in medicinal plants around or are sellers of carrying herbal medicine, advice, or elders in the environment.

The population in this study were medicinal plants found in Dusun Krajan 01 Karang Genting, East Kasiyan Village, Puger District. The data from this study were analyzed descriptively. Each type of medicinal plant found was identified based on its type and documented, and plant descriptions were based on books, literature studies, journals, and articles.

Research Procedure

Early-stage

a. Problem Planning

Lack of community use in utilizing medicinal plants, so some people do not know the benefits of each of these plants.

b. Location determination

The location used is in Krajan 01 Hamlet, Karang Genting, East Kasiyan Village, Puger District. In Dusun Krajan 01, it is used as a research location because there is still a lot of empty land or yard, so many types of plants grow, and there are various kinds of medicinal plants planted compared to other Krajan Hamlets.

c. Observation

Determine the respondents who will be interviewed at the research location.

Research Stage

a. The equipment used is a plant taxonomy book, mobile phone, stationery, interview instruments, or a list of questions.

b. Interview to obtain data on medicinal plants, namely by interviewing.

c. Documentation, in this case, is the process of taking pictures in the form of photos of plants and recording their morphological characteristics.

Final stage

The final step of this research is to analyze the research results obtained regarding the morphology and benefits of medicinal plants, and then the last part is the preparation of booklets. The steps are:

a. Define title

b. Create a booklet format consisting of:

1) Cover

2) Editor

3) Foreword

4) Table of Contents

5) Fill

6) Bibliography

7) Biography

8) Back Cover

c. Collecting references as writing materials in research and booklets.

d. Edit the result.

Result

The results of the research from interviews with local people who already have specific criteria can be seen in [Table 1](#) regarding the identity of the respondents as follows:

Table 1. Respondent's Identity

Name	Age	Work	Education	Informant Criteria
Eva Triastutik	39 years old	Kindergarten teacher	Bachelor	The village head has knowledge of medicine from their parents
Mr. Sidi	63 years old	Farmer	Primary school	Have medicinal knowledge from neighbors around since long ago
Mrs. Umi	39 years old	Jamu	Junior	Have medicinal knowledge from the family and are

Kulsum		gendong seller	high school	sellers of sling herbs
Mrs. Giran	60 years old	Jamu gendong seller	Primary school	Have medicinal knowledge from the family and are sellers of sling herbs
Mrs. Riyani	64 years old	Farm work	Primary school	Have medicinal knowledge from a family that goes downhill

Based on the data above, there can be seen five respondents, one male respondent and four female respondents, the average age of respondents ranges from 39-64 years. The results of interviews of medicinal plants utilized by the people of Kasiyan Village, Puger Subdistrict, can be observed in the table below:

Table 2. Types of Medicinal Plants Found in Krajan Hamlet 01 Kasiyan Village Puger Subdistrict

Local Name	Scientific Name	Family Name	Habitat	Part Used	How to use	Benefit for Health
Suruh	<i>Piper betle L.</i>	Piperaceae	Herbs	Leave	Boiled, Drink	Eliminate body odor and vaginal discharge
Suruh abang	<i>Piper crocatum Ruiz & Pav.</i>	Piperaceae	Herbs	Leave	Boiled, Drink	Eliminate body odor and vaginal discharge dan toothache
Suruh-suruhan	<i>Peperomia pellucid</i>	Piperaceae	Herbs	All parts of the plant	Boiled, Drink	Stomach diseases, anticancer
Kates gantung	<i>Cnidocolus aconitifolius</i>	Euphorbiaceae	Bush	Roots, leaves, and flowers	Boiled, drunk water, or eat leaves	heart disease
Kates	<i>Carica papaya L.</i>	Caricaceae	Bush/tree	Leave	Boiled, drunk water, or eat leaves	Raise platelets, dengue fever, and treat hives
Nongko londo	<i>Annona muricata L.</i>	Annonaceae	Tree	Leave	Boiled, Drink	Diabetes
Bentis	<i>Morinda citrifolia L.</i>	Rubiaceae	Tree/pitting	Fruit	Boiled, Drink	Diabetes
Kesimbukan	<i>Paederia foetida</i>	Rubiaceae	Bush	Leave and trunk	Boiled, Drink	Stomach ache
Kelor	<i>Moringa oleifera L.</i>	Moringaceae	Tree	Leave	Boiled, Drink	Cancer prevention
Sukun	<i>Artocarpus altilis</i>	Moraceae	Tree	Leave	The leaves are dried and then boiled and drunk in the water	Gout
Talok	<i>Muntingia calabura L.</i>	Malvales	Tree	Fruit and leave	Boiled, drunk, or eaten the fruit directly	Lowering diabetes and gout
Ciplukan	<i>Physalis angulata</i>	Solanaceae	Annual herbs	All parts of the plant	Boiled, drink	Stabilizing high blood pressure or hypertension
Jambu abang	<i>Psidium guajava L.</i>	Myrtaceae	Tree/pitting	Leave and fruit	Eaten the fruit or leaves directly and can be boiled, drunk	Increases platelets and dengue fever and relieves fever and diarrhea
Gedang klutuk	<i>Musa balbisiana C.</i>	Musaceae	Annual herbs	Fruit	Pounded and then taken the water and drunk	Stabilize blood sugar levels
Babal	<i>Artocarpus heterophylla L.</i>	Moraceae	Tree	Fruit	Directly eaten added salt	Relieves diarrhea
Telo rambak	<i>Ipomoea batatas</i>	Convolvulaceae	Pitting	Leaf shoots	Ground applied	Treating boils and scars
Puhung	<i>Manihot utilissima.</i>	Euphorbiaceae	Pitting	Leave	Boiled, drink	Smooth digestion and the body's

Kluwih	<i>Artocarpus camansi</i>	Moraceae	Tree	Leaf stem sap	Sliced leaf stems and then dripped on the eyes	source of energy Neutralize myopic eyes or eye disease
Geddang	<i>Musa paradisiaca L.</i>	Musaceae	Annual herbs	Steam sap	Sliced the stem and then dripped it on the wound	Compressing the blood from the wound
Bluberi/Wuni	<i>Antidesma bunius</i>	Euphorbiaceae	Pitting	Fruit	Eaten directly	Anticancer
Jeruk nipis	<i>Citrus aurantifolia</i>	Rutaceae	Pitting	Fruit	Sliced the fruit then, added lime, and burned then took the water and squeezed	Cough
Laos	<i>Alpinia galangal</i>	Zingiberaceae	Terna	Rhizome	Sliced and directly dripped on the wound	Cure ringworm
Katu	<i>Sauropus androgynus L.</i>	Euphorbiaceae	Bush/pitting	Leave	Boiled, drunk, or made soup	Breastfeeding
Kelopo	<i>Cocos nucifera L.</i>	Palmae	Tree	Fruit	Drunk directly	Neutralize toxins in the body and gabakan disease
Kangkung	<i>Ipomoea aquatic</i>	Convolvulaceae	Bush	Trunk and Leave	Boiled water or eaten leaves	Smooth digestion
Bawang putih	<i>Allium sativum</i>	Liliaceae	Terna	Tuber	Ground or applied directly on the skin	Treat fever, chills, and skin diseases (phlegm)
Bawang merah	<i>Allium cepa L. var.</i>	Liliaceae	Terna	Tuber	Ground or applied directly on the skin	Treat fever, boils
Lidah buaya	<i>Aloe vera L.</i>	Liliaceae	Terna	Sap	Sliced and directly dripped on the wound	Treat burns, acne, and hair growth
Kucing-kucingan	<i>Mimosa pudica</i>	Mimosaceae	Herbs	All parts of the plant	Boiled and then took the water to drink	Treating insomnia, gout and rheumatism
Meniran	<i>Phyllanthus niruri L.</i>	Euphorbiaceae	Terna	All parts of the plant	Boiled and then took the water to drink	Treating malaria
Patikan kebo	<i>Euphorbia hirta</i>	Euphorbiaceae	Herbs	Leave	Boiled and then took the water to drink	Treating hemorrhoids and malaria
Anting-antingan	<i>Acalypha indica</i>	Euphorbiaceae	Herbs	All parts of the plant	Boiled and then took the water to drink	Relieves diarrhea, nosebleeds and vomiting blood
Jarong	<i>Achyranthes aspera L.</i>	Amaranthaceae	Herbs	Leaves and roots	Pounded and mixed with shallots and then smeared on the body	Medicine for fever, cough, and convulsions in children
Bayem	<i>Amaranthus hybridus L.</i>	Amaranthaceae	Herbs	Leave and trunk	Boiled and then took the water to drink	Add blood
Jahe	<i>Zingiber officinale Rasc</i>	Zingiberaceae	Terna	Rhizome	Boiled and then took the water to drink	Treating coughs and rheumatism
Kunyit	<i>Curcuma domestica</i>	Zingiberaceae	Terna	Rhizome	Boiled and then took the water to drink	Treat diarrhea and heartburn
Temulawak	<i>Curcuma xanthorhiza</i>	Zingiberaceae	Terna	Rhizome	Boiled and then took the water to drink	Treating ulcers and aches

Kencur	<i>Kaempferia galangal</i>	Zingiberaceae	Terna	Rhizome	Boiled and then took the water to drink	Refreshing breathing and coughing in babies
Sere	<i>Cymbopogon citrates</i>	Poaceae	Chronic grass	Trunk	Boiled and then took the water to drink	Treating gout, cholesterol and diabetes
Alang-alang	<i>Imperata cylindrical</i>	Graminae	Chronic grass	Stems and leaves	Boiled and then took the water to drink	Treating shortness of breath
Brotowali	<i>Tinospora crispa L.</i>	Menispermae	Pitting	Stems and leaves	Ground and soaked	Treating itchy skin
Jarak	<i>Ricinus communis L.</i>	Euphorbiaceae	Pitting / small tree	Stems and leaves	Boiled and then took the water to drink	Treat diarrhea
Belimbing wuluh	<i>Averrhoa bilimba L.</i>	Oxalidaceae	Tree	Flower	Boiled and then took the water to drink	Cough
Bandotan	<i>Ageratum conyzoides L.</i>	Compositae	Annual herbs	Leave	Boiled and then took the water to drink	Treat wounds, ulcers, and canker sores
Cocor bebek	<i>Kalanchoe pinnata Pers.</i>	Crassulaceae	Herbs	Leave	Boiled and then took the water to drink	Fever
Beluntas	<i>Pluchea indica L.</i>	Sphaeranthus	Pitting	Leave	Boiled and then took the water to drink	Breastfeeding
Binahong	<i>Anredera cordifolia</i>	Basellaceae	Pitting	All parts of the plant	Ground and then applied, boiled and drunk water	Treating external injuries and minor concussions

Based on the Interview results, 47 plants were used as medicine by the community in Kasiyan Village, Puger Subdistrict. The residents of Kasiyan Village use these medicinal plants based on their experience or knowledge gained since hereditary. This medicinal plant is used as a traditional medicine because more herbs and alternatives available directly from the yard and rice fields. The local community deliberately cultivates some. The following is presented a diagram of medicinal plants based on their habitat:

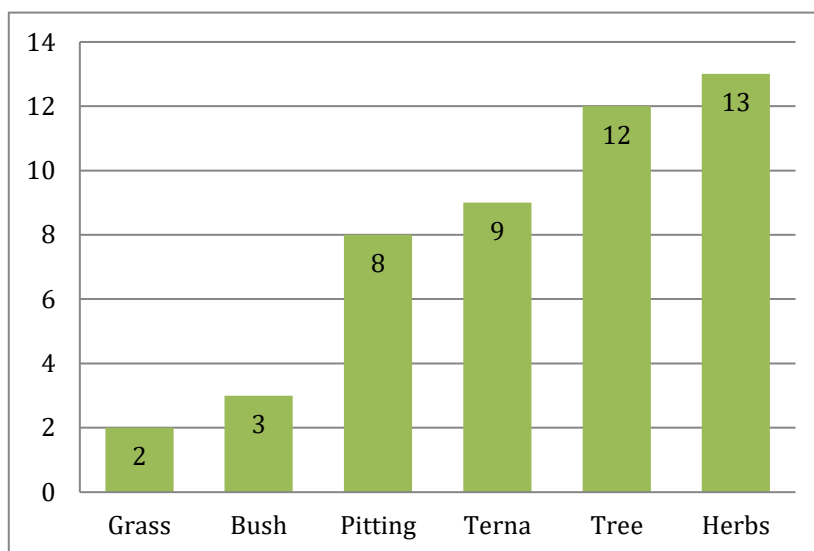


Figure 1. Diagram of The Habitat of Medicinal Plants Found in Kasiyan Village, Puger Subdistrict.

The results of 47 species of medicinal plants found in Kasiyan Village, Puger Subdistrict, consist of 24 families from the Euphorbiaceae family. The percentage of the family of medicinal plants found in Kasiyan Village is presented in the following diagram:

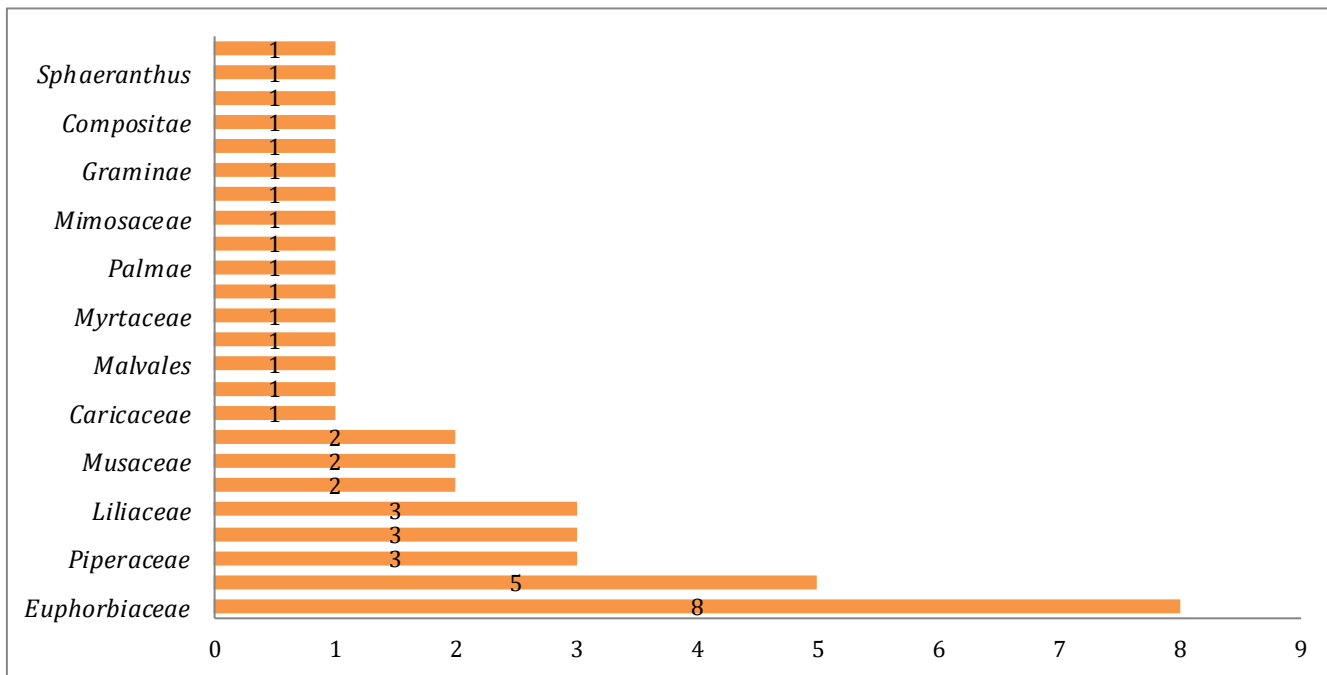


Figure 2. Diagram of Medicinal Plants Found in Kasiyan Village, Puger Subdistrict Based on Family.

Each plant has different plant parts and ways of processing plants, and the following is presented a diagram about the part of the plant used as medicine and how to use medicinal plants, namely:

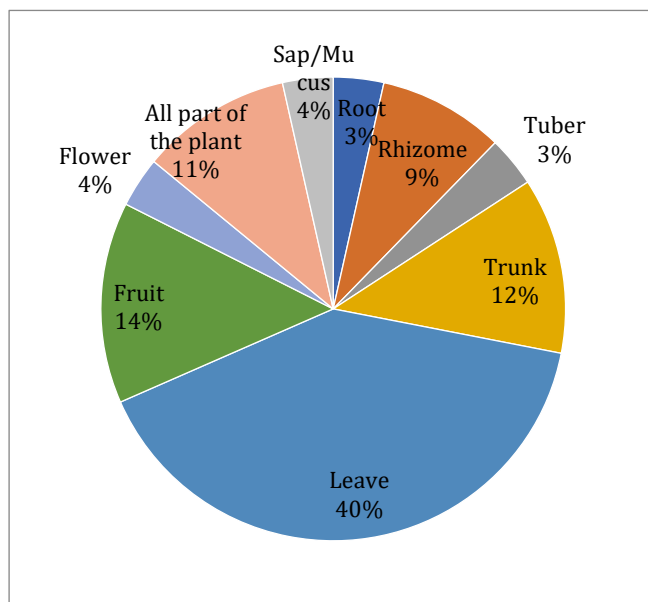


Figure 3. Diagram of Plant Parts Used as Medicine.

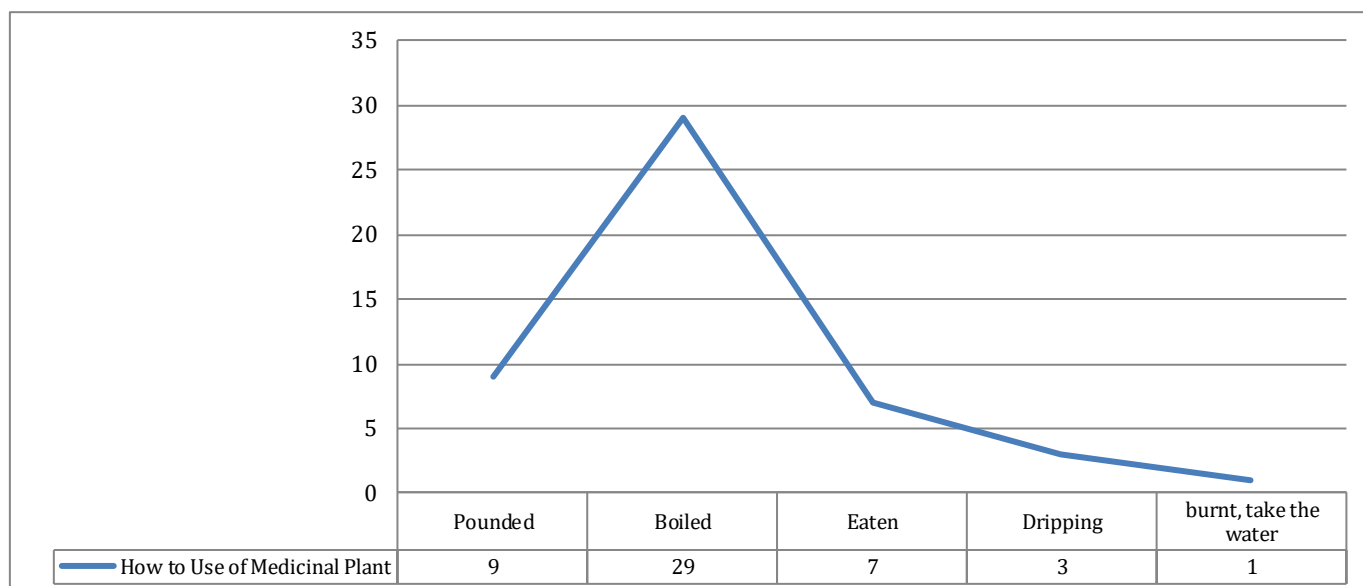


Figure 4. Diagram of Utilization of Medicinal Plants Based on How to Process.

Discussion

Part of a Plant Used as Medicine

The use of medicinal plants in each region has a different way, and this happens because it is motivated by various conditions, one of which is the knowledge obtained from parents or elders for generations about how to use and process it. This is what makes it different in each region. There are many parts of the plant that the people of Dusun Krajan 01 use, East Kasiyan Village, Puger District, consisting of roots, rhizomes, tubers, stems, and so on, and are presented in [table 2](#), while the part of the plant that local people often use is the leaf.

Based on the diagram ([Figure 3](#)), the part of the plant that is often used is the leaf (40%). Leaves are plant organs that are often used as medicine because the leaves have a soft shape and texture compared to other plant organs such as stems or roots. This is in line with the results of research by [Zahoor et al. \(2021\)](#), which states that the leaves are the most widely used part for healing diseases in Punjab (22.11%) and are commonly sold in the herbal market in Lahore, and it this happens because the use of leaves is easier. Accessible compared to roots, seeds, flowers, and fruit. According to [Meliki et al. \(2013\)](#), using leaves for ingredients to make these drugs is called easier how to process, easy how to take, and the efficacy of leaves better than other plant organs. [Sukmawati et al. \(2013\)](#) also stated that the leaves are most widely used as a traditional medicine because the leaves have a soft texture and inside the leaves have a high-water content (70-80%); not only that, the leaves are also an area for photosynthesis which contains many elements. Elements (organic substances) such as chlorophyll, phenols, essential oils, compounds, and potassium have properties that can cure disease. In line with the results of research [Nurchayati et al. \(2021\)](#) explained that the part of the leaf organ is most often used as a medicine because the leaves are the place of photosynthesis so that in the leaves contain many useful substances in the body. According to [Setyowati \(2010\)](#) the leaf part is the most easily obtained part of the plant than the other parts of the plant and in terms of conservation, it certainly does not worry about the plant.

How to Use Medicinal Plants

How to use medicinal plants carried out by the people of Krajan Hamlet 01 East Kasiyan Village Puger District there are several ways, including boiled, pounded and then applied, dripped, eaten directly, and burned for water is presented in the following diagram:

The diagram above shows how medicinal plants in Kasiyan Village, Puger District are most often used by boiling and taking water to drink, namely as many as 29. This is in line with the research results by [Alkawi et al. \(2021\)](#), which stated that more plant herbs by boiled, and then boiled water is drunk. The [Semenya & Maroyi \(2020\)](#) research also noted that in the Capricorn, Sekhukhune, and Waterberg districts, South Africa, the most used boiling technique was 46.0%. This is because boiling makes it easier to process and has the advantage of reducing toxic chemicals. in plants when consumed continuously

According to [Mulyani et al. \(2020\)](#), most medicinal plants boil. This medicinal plant boiling technique is also long, at least 30 minutes to 1 hour. [Adnyana \(2012\)](#); [Oktafiani \(2018\)](#), many medicinal plants have good content for the body, but they need to be appropriately processed because there are also medicinal plants that contain good or bad toxins. So they need to be boiled or cooked using low heat for a relatively long time. Long can be 30 minutes to 2 hours; this is done to reduce the levels of toxins contained therein. According to [Jonosewojo \(2013\)](#); [Oktafiani \(2018\)](#), by boiling techniques like this, the chemical content or active compounds in medicinal plants' leaves, such as flavonoid compounds, can dissolve in water that the body is easier to digest.

The utilization of medicinal plants in Krajan Hamlet 01 East Kasiyan Village is different because they see how the elders process the medicinal plants differently. This has various uses and effects that are not the same in treating and curing disease. The results of this study are in the form of booklets, and this still needs to be developed in further research such students and the general public to increase and increase knowledge. This research is only limited to looking at the types of plants used by the community around Dusun Krajan 01, Kasiyan Timur Village, Puger District. Still, the biodiversity in this hamlet is so abundant and very wide. Further, researchers can explore more broadly biodiversity that can be used as medicine.

Conclusions

The interviews with five respondents show that 47 species belong to 25 families, and most are from the Euphorbiaceae family. The community uses these plants in Kasiyan Village, especially in Krajan 01 Hamlet, Karang Genting, East Kasiyan Village, Puger District. The part of the plant that is often used to be medicinal is the leaves, with a percentage of 40% compared to using other parts of the plant. Using plants can be used as medicine by the community in Kasiyan Village varies from pounded, boiled, eaten directly, dripped or applied, burned, and then taken water. At the same time, the most often used medicinal plant utilization is using boiled and then taken water to drink with a percentage of 29%.

Declaration statement

The authors reported no potential conflict of interest.

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