



IDENTIFICATION OF MEDICINAL PLANTS IN THE ENVIRONMENT OF UNIVERSITAS PAHLAWAN TUANKU TAMBUSAI

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Abstract

The research identification of medicinal plants was conducted in the environment of Universitas Pahlawan Tuanku Tambusai. Riau community has long known and utilized medicinal plants as traditional medicines, these medicinal plants have been used in traditional medicine for generations as an effort to maintain health, prevent disease, and care for health. Traditional medicinal plants serve as primary materials for traditional medicines and are acknowledged for their health benefits. The aim of this study was to classify medical plant species of medicinal plants. Data collection involved surveys and interviews, and the classification was carried out using herbarium methods. The results identified 20 species of medicinal plants across 14 families. Predominantly, these families were associated with the Zingiberaceae family, encompassing species such as Curcuma Domestica, Curcuma Xontoriza, Kaempferia Galanga, Renguas Galanga, Zingiber Officinale, Costus Speciosus. Parts of the plant used as medicine vary depending on the type of plant, the most widely used plant organs are leaves, rhizomes and roots.

Keywords: Identification, medicinal plants, efficacy

INTRODUCTION

Indonesia ranks second globally in terms of medicinal plant biodiversity, following Brazil. Out of the 40,000 flora species worldwide, 30,000 are found in Indonesia alone. Among these, 940 species are recognized for their substantial efficacy and have been utilized in traditional Indonesia for decades (Dorly, 2005). There is an estimated number between 100 to 150 plant families in Indonesia, with the majority of them having the potential to be utilized as medicines (Sudira, 2017).

Indonesians have used traditional medicinal plants for centuries to preserve health, prevent disease, and treat illness. Traditional Indonesian medicinal plants can be obtained from a variety of sources, including plants, animals, and minerals. However, the majority are derived from plants (Menkes, 2017).

According to experts, medicinal plants are divided into three types Zuhud, Ekarelawan and Riswan in Utami, (2013).

- a. Traditional medicinal plants are known to have health benefits and have served as raw materials for traditional medicines.
- b. Modern medicinal plants refer to species that have been scientifically validated to contain chemicals or bioactive substances with therapeutic properties, thereby holding medical justification.
- c. Plant species suspected of containing chemicals or bioactive elements with therapeutic capabilities, which have not yet been medically scientifically validated, require further investigation, especially if they are used as ingredients in traditional medicine. They are known as potential medicinal plants.

The citizen of Riau have long recognized and employed medicinal herbs as a form of traditional medicine. People are more willing to embrace traditional medicine since it is less expensive and simpler to obtain. More study on plant species with medicinal potential, as well as research on knowledge and usage of medicinal plants by local populations, has been conducted in the previous decade, in the Tesso Nillo region (Susiarti *et al.*, 2009).

It's worth noting that humanity has utilized medicinal plants processed as traditional remedies since ancient times, especially among the lower middle class, advancements in technology have led to the processing and packaging of various medicinal plants in contemporary forms. The use of products derived from medicinal plants has developed into a natural and healthy lifestyle (Trimin K, 2015).

MATERIAL AND METHODS

Research Time and Place

This study was conducted between December 2021 and March 2022. Samples were collected from the Universitas Pahlawan Tuanku Tambusai area and identified at the Biology Science Laboratory of Universitas Pahlawan Tuanku Tambusai

Research methods

The methods used in this study included surveys and interviews with community leaders and lecturers at Universitas Pahlawan Tuanku Tambusai who frequently employ plant species in traditional medicine. The data were gathered through a survey to collect medicinal plant specimens in the Universitas Pahlawan Tuanku Tambusai area. Subsequently, the plants were preserved in a herbarium and identified using reference books such as by Utami (2008), Hariana (2006) Widyaningrum (2011), Dalimarta Vol II (2000), and Steenis (2000), Steenis (2005).

Research Procedure

This research was conducted using survey and interview techniques with questionnaires. Interviews were conducted with community leaders and lectures from Universitas Pahlawan Tuanku Tambusai who frequently use plant species in traditional medicine. Both primary and secondary data were collected; primary data encompassed information on plant species used in traditional medicine, the parts utilized, their effectiveness, and methods of use; secondary data comprised information source from literature or literature research.

Data Collection

The data were collected through interviews and field surveys.

1. Interview

Purposive sampling was employed to collect data using interview guides structured as questions. 15 individuals were selected as respondents.

2. Field Survey

Field surveys were conducted to collect medicinal plant species, focusing on the Universitas Pahlawan Tuanku Tambusai. The plants were identified at the Laboratory of Biological Sciences at Universitas Pahlawan Tuanku Tambusai.

Identification of Medicinal Plants

The identification of medical plants involved querying their identity, comparing them with entries in the books or atlases 'Indonesian Medicinal Plants Volume I and II' by Dalimarta (2000), and utilizing identification keys referenced from the flora book by Steenis (2005).

Data analysis

- The information gathered was tabulated and descriptively examined using the following criteria:
- Local names, Indonesian names, Latin names, and medicinal plant families are considered within the taxonomy.
- Locations where medicinal herbs are used
- Various parts of plants, including roots, stems, leaves, flowers, and fruits, utilized for medicinal purpose.
- Efficacy or application of the plants.
- Techniques of processing such as mashing, kneading, burning, and boiling.
- Methods of utilization, including consumption, ingestion, application, and rubbing.

RESULTS AND DISCUSSION

The following table shows data on plants with the potential to be used as pharmaceuticals collected from the region of Universitas Pahlawan Tuanku Tambusai:

Table 1 Medicinal plants found in the area of the Universitas Pahlawan Tuanku Tambusai.

No	Species name	Family	Local name
1	<i>Aloe vera</i>	Asphodelaceae	Lidah Buaya
2	<i>Andropogon nardus</i>	Poaceae	Serai wangi
3	<i>Averrhoa carambola</i>	Oxalidaceae	Belimbing Bintang
4	<i>Blumea balsamifera</i>	Asteraceae	Sambung
5	<i>Carica papaya</i>	Caricaceae	Pepaya
6	<i>Curcuma domestika</i>	Zingiberaceae	Kunyit
7	<i>Curcuma xontoriza</i>	Zingiberaceae	Temulawak
8	<i>Hibiscus rosa sinensis</i>	Malvaceae	Kembang Sepatu
9	<i>Jatropha multifida</i>	Euphorbiaceae	Jarak Tintir
10	<i>Kaempferia galanga</i>	Zingiberaceae	Kencur
11	<i>Kalanchoe pinnata</i>	Crassulaceae	Cocor Bebek
12	<i>Ortosiphon spicatus</i>	Lamiaceae	Kumis Kucing
13	<i>Piper crocatum</i>	Piperaceae	Sirih Merah

14	<i>Renguas galangal</i>	Zingiberaceae	Lengkuas
15	<i>Zingiber officinale</i>	Zingiberaceae	Jahe
16	<i>Samanea saman</i>	Fabaceae	Terambesi
17	<i>Swietenia macrophylla</i>	Meliaceae	Mahoni
18	<i>Alstonia scholaris</i>	Apocynaceae	Pulai
19	<i>Cassia siamea</i>	Fabaceae	Ketapang
20	<i>Costus speciosus</i>	Zingiberaceae	Pacing Mawar

Source : reseacher 2023.

From the data obtained, there are 20 types of medicinal plants in the Universitas Pahlawan area, classified into 14 families, that can be used by the community as ingredients for traditional medicine. The most dominant family is the

Zingiberaceae family, which consists of *Curcuma domestica*, *Curcuma xontoriza*, *Kaempferia galanga*, *Renguas galanga*, *Zingiber officinale*, *Costus speciosus*

Table 2 Plant parts are utilized based on their qualities

Family	Species Name	The Used Part	The Benefits
Asphodelaceae	<i>Aloe vera</i>	Leaf	Bruise Medicine
Poaceae	<i>Andropogon nardus</i>	Stem	Cough medicine, Mouthwash and Post-partum treatment
Oxalidaceae	<i>Averrhoa carambola</i>	Flower	Cough Medicine
Asteraceae	<i>Blumea balsamifera</i>	Leaf	Burn Medicine and Wound
Caricaceae	<i>Carica papaya</i>	Roots	Diarrhea, Malaria, Menstrual Pain, Rheumatism, Kidney Stones
Zingiberaceae	<i>Curcuma domestika</i>	Rhizome	Diarrhea, Stomach ache
Zingiberaceae	<i>Curcuma xontoriza</i>	Rhizome	Back Pain, Menstrual Pain, Increase Appetite
Malvaceae	<i>Hibiscus rosa sinensis</i>	Flower	Fever, Cough, Sprue
Euphorbiaceae	<i>Jatropha multifida</i>	Leaf	Bruise Medicine and Treat Wounds
Zingiberaceae	<i>Kaempferia galanga</i>	Rhizome	Have a Cold, Headache, Cough
Crassulaceae	<i>Kalanchoe pinnata</i>	Leaf	Carbuncle, Tonsils, Fever, and Headache
Lamiaceae	<i>Ortosiphon spicatus</i>	Leaf	Urinary Tract Medicine
Piperaceae	<i>Piper crocatum</i>	Leaf	Breast Cancer Medicine

Zingiberaceae	<i>Rengas galanga</i>	Rhizome	Rheumatism, Tinea Versicolor
Zingiberaceae	<i>Zingiber officinale</i>	Rhizome	Heartbun, Headache, and Increase Appetite
Fabaceae	<i>Samanea saman</i>	Leaf	Cold Medicine, Headache, and Bowel Disease
Meliaceae	<i>Swietenia macrophylla</i>	Fruit	Pain Medication
Apocynaceae	<i>Alstonia scholaris</i>	Leaf	Obesity Prevention Drug
Fabaceae	<i>Cassia siamea</i>	Leaf	Tinea Versicolor and Ringworm
Zingiberaceae	<i>Costus speciosus</i>	Leaf	Asthma Medicine and Anemia

Source : reseacher 2023.

The plant parts used as medicine vary depending on the type of plant, as shown in the table above. However, the data analysis suggests that leaves, rhizomes, and roots are the most commonly utilized plant organs. The leaves are the most extensively utilized component of the plant, containing more distinct secondary metabolites than any of the other 20 categories of medicinal plants found. The parts of medicinal plants that can be used as medicine include leaves, fruit, flowers, roots, rhizomes, bark, and sap (Dalimarta, 2000).

Traditional medicine has long been recognized and practiced by the Riau people. People are more likely to embrace traditional medicine because it is less expensive and easier to obtain. Based on findings from thousands of years of research, medicinal plants have been utilized as medicine. These medications are consumed in the form of natural medicines such as tea, poultice, powder, and other herbal formulations (Marcy J. *et al.*, 2005). The discovery of medications from medicinal plants has had a significant impact on medicine; most secondary metabolites of plants and their derivatives have been used to treat a variety of diseases in the latter half-century (Butler. M.S., 2004). Many medicinal plants provide natural medicines that are utilized in clinical environments (Marcy J. *et al.*, 2005).

In Asian nations, traditional medicine is commonly practiced. Traditional medicine, also known as original medicine or traditional medicines, refers to medications that have been produced via the knowledge systems of diverse

communities from generation to generation before the advent of modern medicine (Gunjan *et al.*, 2012). Plant heritage, whether endemic, naturalized, or recently introduced, makes up a large part of a country's wealth (Mitchell and Ahmad 2006). Traditional medicine practices include traditional Chinese, Ayurveda, Unani, Jamu, Kampo, Iranian, Aztec, and various forms of European and Arabic medicine is a well-known example of the practice of traditional medicine (Heinrich, 2010).

Researchers have documented this information across various fields and areas, emphasizing the importance of recording and analyzing their findings (Heinrich, 2010). Such recordings can assist in identifying plant species for future pharmacology and phytochemical research while preserving traditional medical knowledge for future generations (Asiime *et al.*, 2013 cit Zaki H.P., *et al.*, 2019).

CONCLUSION

1. Univesitas Pahlawan Tuanku Tambusai possesses a total of 20 medicinal plant species categorized into 14 families, which could potentially benefit the community. This data can serve as valuable teaching material for students and can also be utilized in the development of Universitas Pahlawan Tuanku Tambusai's master plan.
2. The groups of plants to Zingiberaceae, Fabaceae, Lamiaceae, and Malvaceae are commonly utilized for medicinal purposes.

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