



**ETHNOPHARMACOLOGICAL SURVEY OF MEDICINAL PLANTS USED IN THE
TREATMENT OF DIARRHEA IN SALAWU REGION, TASIKMALAYA, WEST JAVA,
INDONESIA**

Muhammad Azriel Aulia, Andini, Delia Azma Febiyanti, Nadia Siti Syaarifah, Alya Dila Afifa, Mahatma Adha Sugwidiya, Risa Aulia Khairani, Rima Anggera Puspita, Siti Nur Syifa, Siti Nurhamidah Hardiana, Navelga Maghfira Idzani, Nabila Tsalist Hanifah, Husniah, Rizky Fauziah Manshur, Alya Ratna Irfadillah, Satria Emmir Rafshanzani and Maulana Yusuf Alkandahri*

Faculty of Pharmacy, Universitas Buana Perjuangan Karawang, Karawang, West Java, Indonesia.



*Corresponding Author: Maulana Yusuf Alkandahri

Faculty of Pharmacy, Universitas Buana Perjuangan Karawang, Karawang, West Java, Indonesia.

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ABSTRACT

The use of traditional medicinal plants in the management of diarrhea has long been practiced in Indonesia. Currently, researchers are starting to look for new antidiarrheal compound candidates derived from natural ingredients that have been empirically proven to have antidiarrheal effects. This research aims to document and preserve the use of ethnomedicinal to treat diarrhea by people in the Salawu Region, Tasikmalaya, West Java, Indonesia. Fieldwork was carried out from March to April 2024 using direct interviews, questionnaires and discussions. Plant species are identified based on standard taxonomic methods, flower morphological characteristics, and where possible, using samples for comparison, as well as consultation with experts and the literature. The plant types obtained were grouped into families according to the Cronquist classification system. Plant names were checked against the Plant List (www.plantlist.org) and the International Plant Name Index (www.ipni.org). This research reports that 30 plant species are commonly used by people in the Salawu Region to treat diarrhea. Among the various plant parts used, leaves (53.3%) are most frequently used in making medicine, followed by rhizome (16.7%), seed (10%), root (6.7%), fruit (6.7%), stem and rind (3.3% respectively). Meanwhile, the most frequently used preparation methods were decoction (83.3%) and infusion (16.7%). The results of this research confirm that people in the Salawu Region still rely heavily on medicinal plants for their health care system, especially for the treatment of diarrhea with the most frequently used parts of the leaves and their use in decoctions and infusions.

KEYWORDS: Traditional medicine, Ethnomedicinal plants, Salawu Region, Diarrhea.

INTRODUCTION

In developing countries, such as Indonesia, diarrhea is one of the main causes of morbidity and mortality in both children and adults. This is mainly due to poor hygiene and sanitation. Diarrhea kills more children than malaria, measles, and AIDS.^[1] About 1.5 million children die every year from diarrhea.^[2] Diarrhea is defined as loose or watery stools at least 3 times in 24 hours and is classified as acute and chronic based primarily on the duration of symptoms. Acute diarrhea is usually caused by bacteria (eg, *Campylobacter*, *Salmonella*, *Shigella*, and *Escherichia coli*) and viruses (eg, rotavirus). Diarrhea can also be caused by drugs such as antibiotics, anticancer drugs, and antacids that contain magnesium. On the other hand, chronic diarrhea is usually associated with functional disorders such as irritable bowel syndrome or intestinal diseases such as

Crohn's disease. In addition, parasitic infections (*Giardia lamblia*, *Entamoeba histolytica*, and *Cryptosporidium*) can also cause chronic or persistent diarrhea.^[3] The majority of people living in developing countries depend on traditional medicine to treat various diseases.^[2] Medicinal plants are usually preferred for treating digestive disorders, such as diarrhea because they contain many elements that have the potential to increase effects and/or neutralize side effects and are considered relatively safe in long-term use.^[4] Like other developing countries, people in Indonesia rely heavily on the therapeutic benefits of traditional medicine.^[5] One of the Region in Indonesia that still uses herbal plants as an alternative treatment, especially to treat diarrhea, is Salawu Region. This research aims to obtain detailed information about the use of herbal plants for alternative

therapy for diarrhea in Salawu Region, Tasikmalaya, West Java, Indonesia using a field survey method.

MATERIALS AND METHODS

Study area

Salawu is located in Tasikmalaya Regency, West Java, Indonesia, with an area of 50.50 km². This area has an altitude of 612 meters above sea level with an average maximum air temperature of 22°C and a minimum of 19°C. Moreover, it is located between 07°21' 42" South Latitude and 107°54' 16" East Longitude. This area is a tropical rainforest climate area that is mostly inhabited by Sundanese tribes (98%) and other tribes (2%). Vegetation in the study area is in humid conditions with an average rainfall of 2,072 mm/year.

Data collection

An extensive field survey was carried out to obtain information about medicinal plants from the Sundanese tribe in the study area. To document existing information about medicinal plants from tribal practitioners, several field visits were conducted from March to April 2024 in the Salawu Region, Tasikmalaya, West Java, Indonesia. During the research, ethnomedicinal information was collected from middle-aged and older tribal practitioners in their local language (Sundanese), through direct interviews, questionnaires, and discussions. Information on local names of plants, plant parts used, preparation methods and administration (e.g., infusion, paste, juice and decoction) of all collected ethnomedicinal plants was recorded during the survey period.

Botanical identification

Plant species are identified based on standard taxonomic methods, flower morphological characteristics, and

where possible, using samples for comparison, as well as consultation with experts and the literature.^[6] The plant types obtained were grouped into families according to the Cronquist classification system, except for Pteridophyta and Gymnospermae.^[7] Plant names were checked against the Plant List (www.plantlist.org) and the International Plant Name Index (www.ipni.org).

Ethics statement

All participants provided verbal consent before the interview and gave consent to publish the information they provided.

RESULTS AND DISCUSSION

This research revealed that 30 plant species are commonly used by local people to treat diarrhea (Table 1). This shows that the study location is affordable in terms of biodiversity. Among the various plant parts used, leaves (53.3%) are most frequently used in making medicine, followed by rhizome (16.7%), seed (10%), root (6.7%), fruit (6.7%), stem and rind (3.3% respectively). The use of leaves is reported to be easier to prepare and easier to extract active substances from them for treatment. At the same time, leaves have less effect on the mother plant.^[8] Meanwhile, the most frequently used preparation methods were decoction (83.3%) and infusion (16.7%). These results are in line with previous research which reported that the forms of traditional medicine most widely used by the community were decoctions and infusions.^[6]

Table 1: Ethnomedicinal plants, local name, part used, mode of administration, and dosage uses in Salawu, Tasikmalaya, West Java, Indonesia.

No	Species	Family	Local name	Parts used	Mode of administration	Dosage of use
1	<i>Allium sativum</i> L.	Alliaceae	Bawang Putih	Rhizome	Infusion	20 grams once a day
2	<i>Alpinia purpurata</i> K. Schum	Zingiberaceae	Lengkuas	Rhizome	Decoction	200 grams once a day
3	<i>Andrographis paniculata</i> Nees	Acanthaceae	Sambiloto	Leaf	Decoction	100 grams once a day
4	<i>Andrographis paniculata</i> Nees	Acanthaceae	Sambiloto	Leaf	Decoction	20 grams once a day
5	<i>Anredera cordifolia</i> (Ten.) Steenis	Basellaceae	Binahong	Leaf	Decoction	100 grams once a day
6	<i>Camellia sinensis</i> (L.) Kuntze	Theaceae	Teh Hijau	Leaf	Decoction	200 grams once a day
7	<i>Canna discolor</i> L.	Cannaceae	Ganyong	Root	Decoction	30 grams once a day
8	<i>Carica papaya</i> L.	Caricaceae	Pepaya	Seed	Decoction	60 grams once a day
9	<i>Cinnamomum verum</i> J.Presl	Lauraceae	Kayu Manis	Stem	Decoction	3 grams once a day
10	<i>Coleus scutellarioides</i> (L.) Benth.	Lamiaceae	Miana	Leaf	Decoction	200 grams once a day
11	<i>Curcuma longa</i> L.	Zingiberaceae	Kunyit	Rhizome	Infusion	100 grams once a day
12	<i>Eleutherine palmifolia</i> (L.) Merr	Iridaceae	Bawang Dayak	Leaf	Decoction	200 grams once a day

13	<i>Garcinia mangostana</i> L.	Clusiaceae	Manggis	Rind	Infusion	200 grams once a day
14	<i>Hibiscus tiliaceus</i> L.	Malvaceae	Waru	Leaf	Decoction	100 grams once a day
15	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Jarak	Leaf	Decoction	200 grams once a day
16	<i>Kaempferia galanga</i> L.	Zingiberaceae	Kencur	Rhizome	Infusion	100 grams once a day
17	<i>Maranta arundinaceae</i> L.	Manantaceae	Tanaman Garut	Root	Decoction	100 grams once a day
18	<i>Melastoma candidum</i> D. Don.	Melastomataceae	Senggani	Leaf	Decoction	200 grams once a day
19	<i>Momordica charantia</i> L.	Cucurbitaceae	Pare	Leaf	Decoction	100 grams once a day
20	<i>Morinda citrifolia</i> L.	Rubiaceae	Mengkudu	Fruit	Infusion	10 grams once a day
21	<i>Moringa oleifera</i> Lamk.	Moringaceae	Kelor	Leaf	Decoction	140 grams once a day
22	<i>Myristica fragrans</i> Houtt.	Myristicaceae	Pala	Seed	Decoction	2 grams once a day
23	<i>Nigella sativa</i> L.	Ranunculaceae	Jinten Hitam	Seed	Decoction	200 grams once a day
24	<i>Phaleria macrocarpa</i> (Scheff.) Boerl)	Thymelaceae	Mahkota Dewa	Fruit	Decoction	200 grams once a day
25	<i>Piper betle</i> L.	Piperaceae	Sirih	Leaf	Decoction	200 grams once a day
26	<i>Psidium guajava</i> L.	Myrtaceae	Jambu Biji	Leaf	Decoction	100 grams once a day
27	<i>Sonchus arvensis</i> L.	Asteraceae	Tempuyung	Leaf	Decoction	200 grams once a day
28	<i>Syzygium polyanthum</i> (Wight) Walpers	Myrtaceae	Salam	Leaf	Decoction	50 grams once a day
29	<i>Tinospora crispa</i> L.	Menispermaceae	Baratawali	Leaf	Decoction	100 grams once a day
30	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Jahe	Rhizome	Decoction	5 grams once a day

CONCLUSIONS

The results of this research confirm that people in the Salawu Region still rely heavily on medicinal plants for their health care system, especially for the treatment of diarrhea with the most frequently used parts of the leaves and their use in decoctions and infusions.

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