

**ETHNOPHARMACOLOGICAL STUDY OF ANTIDIARRHEAL IN THE CENTRAL  
CIKARANG REGION, BEKASI, WEST JAVA, INDONESIA**

**Amanda Putri, Alya Safitri, Fatma Aliya Firdaus, Habbi Albari Syddik, Muhammad Fadia Ikhsan, Najwa Pasya Fadhillah, Nayla Lubnaa Syakira, Nazwwa Nurshadrinna, Rizka Nurul Ilma, Selpani Rijki, Sintia Meylani, Siti Khoeriyah, Zahira Puspitarini, Zahra Maila Rosada, Zaskia Novadila Kaidun, Riska Siti Nurjanah, 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**

Diarrhea is one of the most common causes for thousands of deaths every year. Therefore, identification of new source of antidiarrheal drugs becomes one of the most prominent focuses in modern research. This research aims to document and preserve the use of ethnomedicine to treat diarrhea by people in the Central Cikarang Region, Bekasi, West Java, Indonesia. Fieldwork was carried out from November to December 2025 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](http://www.plantlist.org)) and the International Plant Name Index ([www.ipni.org](http://www.ipni.org)). This research reports that 30 plant species are commonly used by people in the Central Cikarang Region to treat diarrhea. Among the various plant parts used, leaves (53.3%) are most frequently used in making medicines, followed by rhizomes (16.7%), seed (10%), root (6.7%), fruit (6.7%), stem, and rind (respectively 3.3%). Meanwhile, the most frequently used preparation methods were decoction (80.0%) and infusion (20.0%). The results of this research confirm that people in the Central Cikarang 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, Central Cikarang Region, Diarrhea.

**INTRODUCTION**

Diarrhea is characterized by an increase in the frequency of bowel movements, wet stool and abdominal pains.<sup>[1]</sup> It is the world's third highest killer disease, contributing substantially to pediatric morbidity and mortality, especially in the malnourished.<sup>[2]</sup> The incidence of diarrhea is still high (about 7.1 million per year), despite the efforts of international organizations to control this disease.<sup>[3]</sup> Antibiotics used as antidiarrheal drugs sometimes provoke adverse effects and microorganisms tend to develop resistance toward them.<sup>[4]</sup> Therefore, it is important to identify novel, safe, and more effective drugs for the prevention and treatment of diarrhea. The

majority of people living in developing countries depend on traditional medicine to treat various diseases.<sup>[5]</sup> 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.<sup>[6]</sup> Like other developing countries, people in Indonesia rely heavily on the therapeutic benefits of traditional medicine.<sup>[7]</sup> One of the Region in Indonesia that still uses herbal plants as an alternative treatment, especially to treat diarrhea, is Central Cikarang Region. This research aims to obtain detailed information about the use of herbal plants for

alternative therapy for diarrhea in Central Cikarang Region, Bekasi, West Java, Indonesia using a field survey method.

## MATERIALS AND METHODS

### Study Area

Central Cikarang is located in Bekasi Regency, West Java, Indonesia, with an area of 54.12 km<sup>2</sup>. This area has an altitude of 20 meters above sea level with an average maximum air temperature of 33°C and a minimum of 24°C. Moreover, it is located between 06°21'13" South Latitude and 107°11'12" East Longitude. This area is a tropical climate area that is mostly inhabited by Sundanese tribes (90%) and other tribes (10%). Vegetation in the study area is in humid conditions with an average rainfall of 350 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 November to December 2025 in the Central Cikarang Region, Bekasi, 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 routes (e.g., infusion, paste, juice and decoction) of all ethnomedicinal plants collected were 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.<sup>[8]</sup> The plant types obtained were grouped into families according to the Cronquist classification system, except for Pteridophyta and Gymnospermae.<sup>[9]</sup> Plant names were checked against the Plant List ([www.plantlist.org](http://www.plantlist.org)) and the International Plant Name Index ([www.ipni.org](http://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 medicines, followed by rhizomes (16.7%), seed (10%), root (6.7%), fruit (6.7%), stem, and rind (respectively 3.3%). 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.<sup>[10]</sup> Meanwhile, the most frequently used preparation methods were decoction (80.0%) and infusion (20.0%). 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.<sup>[8]</sup>

**Table 1: Ethnomedicinal plants, local name, part used, mode of administration, and dosage uses in Central Cikarang, Bekasi, 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	80 grams once a day
2	<i>Alpinia purpurata</i> K. Schum	Zingiberaceae	Lengkuas	Rhizome	Decoction	50 grams once a day
3	<i>Andrographis paniculata</i> Nees	Acanthaceae	Sambiloto	Leaf	Decoction	50 grams once a day
4	<i>Annona muricata</i> L.	Annonaceae	Sirsak	Leaf	Infusion	10 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	20 grams once a day
7	<i>Canna discolor</i> L.	Cannaceae	Ganyong	Root	Decoction	10 grams once a day
8	<i>Carica papaya</i> L.	Caricaceae	Pepaya	Seed	Decoction	50 grams once a day
9	<i>Cinnamomum verum</i> J.Presl	Lauraceae	Kayu Manis	Stem	Decoction	90 grams once a day
10	<i>Coleus scutellarioides</i> (L.) Benth.	Lamiaceae	Miana	Leaf	Decoction	20 grams once a day
11	<i>Curcuma longa</i> L.	Zingiberaceae	Kunyit	Rhizome	Infusion	100 grams once a day

12	<i>Dracaena angustifolia</i> Roxb.	Asparagaceae	Suji	Leaf	Decoction	10 grams once a day
13	<i>Garcinia mangostana</i> L.	Clusiaceae	Manggis	Rind	Infusion	50 grams once a day
14	<i>Hibiscus tiliaceus</i> L.	Malvaceae	Waru	Leaf	Decoction	10 grams once a day
15	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Jarak	Leaf	Decoction	20 grams once a day
16	<i>Kaempferia galanga</i> L.	Zingiberaceae	Kencur	Rhizome	Infusion	50 grams once a day
17	<i>Maranta arundinaceae</i> L.	Manantaceae	Tanaman Garut	Root	Decoction	10 grams once a day
18	<i>Melastoma candidum</i> D. Don.	Melastomataceae	Senggani	Leaf	Decoction	20 grams once a day
19	<i>Momordica charantia</i> L.	Cucurbitaceae	Pare	Leaf	Decoction	50 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	100 grams once a day
22	<i>Myristica fragrans</i> Houtt.	Myristicaceae	Pala	Seed	Decoction	50 grams once a day
23	<i>Nigella sativa</i> L.	Ranunculaceae	Jinten Hitam	Seed	Decoction	20 grams once a day
24	<i>Phaleria macrocarpa</i> (Scheff.) Boerl)	Thymelaceae	Mahkota Dewa	Fruit	Decoction	50 grams once a day
25	<i>Piper betle</i> L.	Piperaceae	Sirih	Leaf	Decoction	10 grams once a day
26	<i>Psidium guajava</i> L.	Myrtaceae	Jambu Biji	Leaf	Decoction	50 grams once a day
27	<i>Sonchus arvensis</i> L.	Asteraceae	Tempuyung	Leaf	Decoction	20 grams once a day
28	<i>Syzygium polyanthum</i> (Wight) Walpers	Myrtaceae	Salam	Leaf	Decoction	150 grams once a day
29	<i>Tinospora crispa</i> L.	Menispermaceae	Baratawali	Leaf	Decoction	10 grams once a day
30	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Jahe	Rhizome	Decoction	100 grams once a day

## CONCLUSIONS

The results of this research confirm that people in the Central Cikarang 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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