



## ETHNOPHARMACOLOGICAL SURVEY OF ANTI-ULCERATIVE COLITIS PLANTS IN THE SETU REGION, BEKASI, WEST JAVA, INDONESIA

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### ABSTRACT

Ulcerative colitis is a chronic debilitating inflammatory disease that affects the colon and the rectum and typically involves the innermost lining or mucosal membrane. Due to unwanted effects of synthetic anti-colitis drugs, natural products are being explored as alternative or complementary therapy. This research aims to document and preserve the use of ethnomedicine to treat ulcerative colitis by people in the Setu Region, Bekasi, West Java, Indonesia. Fieldwork was carried out from May to June 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 Setu Region to treat ulcerative colitis. 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 Setu Region still rely heavily on medicinal plants for their health care system, especially for the treatment of ulcerative colitis with the most frequently used parts of the leaves and their use in decoctions and infusions.

**KEYWORDS:** Traditional medicine, Ethnomedicinal plants, Setu Region, Anti-ulcerative colitis.

### INTRODUCTION

Ulcerative colitis (UC) is a chronic intestinal immune inflammatory disease, the course of which is protracted. As lifestyles continue to change, the worldwide prevalence of UC has increased annually.<sup>[1]</sup> Currently, the treatment drug options for UC primarily include amino salicylic acid, glucocorticoids, and certain biological agents. In the course of these treatments, various adverse reactions can occur, including drug dependence, cytotoxicity, and liver and kidney damage.<sup>[2]</sup> Additionally, relapse can easily occur after stopping the drug.<sup>[3,4]</sup> Therefore, it is important to identify novel, safe, and more effective drugs for the prevention and treatment of UC. 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 UC, is Setu Region. This research aims to obtain detailed information about the use of herbal plants for alternative therapy for UC in Setu Region, Bekasi, West Java, Indonesia using a field survey method.

### MATERIALS AND METHODS

#### Study Area

Setu is located in Bekasi Regency, West Java, Indonesia, with an area of 62.16 km<sup>2</sup>. This area has an altitude of 40 meters above sea level with an average maximum air temperature of 33°C and a minimum of 25°C. Moreover, it is located between 06°14' 00" South Latitude and 107°00' 00" East Longitude. This area is a tropical

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 351 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 May to June 2025 in the Setu 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 ulcerative colitis (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 Setu, 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               | 50 grams once a day  |
| 2  | <i>Alpinia purpurata</i> K. Schum         | Zingiberaceae   | Lengkuas      | Rhizome    | Decoction              | 100 grams once a day |
| 3  | <i>Andrographis paniculata</i> Nees       | Acanthaceae     | Sambiloto     | Leaf       | Decoction              | 100 grams once a day |
| 4  | <i>Annona muricata</i> L.                 | Annonaceae      | Sirsak        | Leaf       | Infusion               | 150 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              | 100 grams once a day |
| 8  | <i>Carica papaya</i> L.                   | Caricaceae      | Pepaya        | Seed       | Decoction              | 150 grams once a day |
| 9  | <i>Cinnamomum verum</i> J. Presl          | Lauraceae       | Kayu Manis    | Stem       | Decoction              | 50 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               | 150 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               | 250 grams once a day |
| 17 | <i>Maranta arundinaceae</i> L.            | Manantaceae     | Tanaman Garut | Root       | Decoction              | 150 grams once a day |
| 18 | <i>Melastoma candidum</i> D.              | Melastomataceae | Senggani      | Leaf       | Decoction              | 200 grams once a day |

|    |   |                |              |         |           |                      |
|----|---|----------------|--------------|---------|-----------|----------------------|
|    | Don.  |                |              |         |           |                      |
| 19 | <i>Momordica charantia</i> L.               | Cucurbitaceae  | Pare         | Leaf    | Decoction | 250 grams once a day |
| 20 | <i>Morinda citrifolia</i> L.                | Rubiaceae      | Mengkudu     | Fruit   | Infusion  | 100 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 | 200 grams once a day |
| 24 | <i>Phaleria macrocarpa</i> (Scheff.) Boerl) | Thymelaceae    | Mahkota Dewa | Fruit   | Decoction | 250 grams once a day |
| 25 | <i>Piper betle</i> L.                       | Piperaceae     | Sirih        | Leaf    | Decoction | 100 grams once a day |
| 26 | <i>Psidium guajava</i> L.                   | Myrtaceae      | Jambu Biji   | Leaf    | Decoction | 150 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 | 100 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 | 100 grams once a day |

## CONCLUSIONS

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

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