

**ETHNOPHARMACOLOGICAL STUDY OF ANTIHISTAMINE IN THE BUNGURSARI
REGION, PURWAKARTA, WEST JAVA, INDONESIA**

Aditiya Rizky Putra Abimanyu, Adinda Khoirun Nissa, Anjela Dian Putri Rahayu, Ayu Wandira, Deden Sukandar, Dida Fahdona Azzahra, Ferdyan Pranata Saputra, Ilham Bintang Pratama, Iqbal Firmansyah, Jihan Rosmayati, Ramdani Nur Ilham, Reza Rizky Yuniar, Rizky Marsada, Sigit Roma Rezki Harahap, Tiurida Pandiangan, Wipena Fariza 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.

Article Received on 19/04/2025

Article Revised on 09/05/2025

Article Accepted on 29/05/2025

ABSTRACT

Allergic diseases are a common disease, yet the cases and severity increasing by years. The WHO reported that approximately 20% of the world population suffers from IgE-mediated allergic diseases. The disease is caused by mast cell degranulation triggered by the presence of allergen. This research aims to document and preserve the use of ethnomedicine to treat allergies by people in the Bungursari Region, Purwakarta, West Java, Indonesia. Fieldwork was carried out from October to December 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 study reports that 30 plant species are commonly used by people in the Bungursari Region to treat allergies. Among the various plant parts used, leaves (50.0%) are most often used in making medicine, followed by rhizome (13.3%), fruit (13.3%), stem, seeds, and flower (6.7% respectively), and rind (3.3%). Meanwhile, the most frequently used preparation method was decoction (76.7%) and infusion (23.3%). The results of this research confirm that people in the Bungursari Region still rely heavily on medicinal plants for their health care system, especially for the treatment of allergies with the most frequently used parts of the leaves and their use in decoctions and infusions.

KEYWORD:- Traditional medicine, Ethnomedicinal plants, Bungursari Region, Allergic.

INTRODUCTION

Histamine is referred to common symptoms and allergic reactions. They are mostly comparable with histamine intolerance. Many typical reactions to this allergy can vary, which include migraine or headache, trouble with nasal congestion or sinus, fatigue, hives, stomach issues, abnormal menstrual period, nausea, and vomiting. Histamine is the compound for the immune response produced by the mastocyte. Antihistamines are a type of medication which is often used to manage a different variety of allergic problems in your body. Antihistamines are drugs used for the prevention of allergic rhinitis and allergies.^[1,2] Histamine is activated by mast cells activation and basophils, via immunology and non-immunological mechanisms which contribute to allergic and anaphylaxis reactions.^[3] Most antihistamines drugs can be effective if used for several weeks, but the consequences can worsen side effects such as senile, arrhythmia, liver damage, and etc.^[5] Therefore, it is necessary to find new antihistamines agents derived from

natural ingredients in the form of herbal plants. Compared to conventional drugs, herbal plants provide many advantages, including cost-effectiveness, broad cultural acceptance, ease of accessibility, and lower side effects.^[6] Currently, research to obtain new antihistamines drugs derived from natural ingredients continues to be carried out, one of which is through exploration of active compounds from natural ingredients, especially medicinal plants that have traditionally been used by people to treat allergies in various regions in Indonesia.^[7-9] One of the Region in Indonesia that still uses herbal plants as an alternative treatment, especially to treat allergies is Bungursari Region. This research aims to obtain detailed information about the use of herbal plants for alternative therapy for allergies in Bungursari Region, Purwakarta, West Java, Indonesia using a field survey method.

MATERIALS AND METHODS

Study area

Bungursari is located in Purwakarta Regency, West Java, Indonesia, with an area of 54.66 km². This area has an altitude of 500 meters above sea level with an average maximum air temperature of 31°C and a minimum of 23°C. Moreover, it is located between 06°28'56" South Latitude and 107°28'42" East Longitude. This region 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 3,093 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 October to December 2024 in the Bungursari Region, Purwakarta, 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.^[10] The plant types obtained were grouped into families according to the Cronquist classification system, except for Pteridophyta and Gymnospermae.^[11] 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 there are 30 plant species commonly used by the local Sundanese tribe to treat allergies (Table 1). This shows that the study location is affordable in terms of biodiversity. Among the various plant parts used, leaves (50.0%) are most often used in making medicine, followed by rhizome (13.3%), fruit (13.3%), stem, seeds, and flower (6.7% respectively), and rind (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.^[12] Meanwhile, the most frequently used preparation method was decoction (76.7%) and infusion (23.3%). 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.^[10]

Table 1: Ethnomedicinal plants, local name, part used, mode of administration, and dosage uses in Bungursari, Purwakarta, 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	10 grams once a day
2	<i>Aloe vera</i> Burm.f.,	Asphodelaceae	Lidah Buaya	Stem	Decoction	150 grams once a day
3	<i>Andrographis paniculata</i> Nees	Acanthaceae	Sambiloto	Leaf	Decoction	80 grams once a day
4	<i>Annona muricata</i> L.	Annonaceae	Sirsak	Leaf	Infusion	100 grams once a day
5	<i>Anredera cordifolia</i> (Ten.) Steenis	Basellaceae	Binahong	Leaf	Decoction	150 grams once a day
6	<i>Averrhoa carambola</i> L.	Oxalidaceae	Belimbing	Leaf	Infusion	100 grams once a day
7	<i>Carica papaya</i> L.	Caricaceae	Pepaya	Leaf	Decoction	200 grams once a day
8	<i>Cinnamomum verum</i> J.Presl	Lauraceae	Kayu Manis	Stem	Decoction	200 grams once a day
9	<i>Citrus aurantifolia</i> (Christm) Swingle	Rutaceae	Jeruk Nipis	Fruit	Decoction	5 grams once a day
10	<i>Clitoria ternatea</i> L.	Fabaceae	Bunga Telang	Flower	Decoction	100 grams once a day
11	<i>Cosmos caudatus</i> Kunth	Asteraceae	Kenikir	Leaf	Decoction	150 grams once a day
12	<i>Curcuma longa</i> L.	Zingiberaceae	Kunyit	Rhizome	Infusion	120 grams

						once a day
13	<i>Garcinia mangostana</i> L.	Clusiaceae	Manggis	Rind	Infusion	200 grams once a day
14	<i>Hibiscus sabdariffa</i> L.	Malvaceae	Rosela	Flower	Decoction	100 grams once a day
15	<i>Kaempferia galanga</i> L.	Zingiberaceae	Kencur	Rhizome	Infusion	100 grams once a day
16	<i>Mangifera indica</i> L.	Anacardiaceae	Mangga	Leaf	Decoction	250 grams once a day
17	<i>Momordica charantia</i> L.	Cucurbitaceae	Pare	Leaf	Decoction	150 grams once a day
18	<i>Morinda citrifolia</i> L.	Rubiaceae	Mengkudu	Fruit	Infusion	50 grams once a day
19	<i>Moringa oleifera</i> Lamk.	Moringaceae	Kelor	Leaf	Decoction	150 grams once a day
20	<i>Nigella sativa</i> L.	Ranunculaceae	Jinten Hitam	Seed	Decoction	100 grams once a day
21	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Kemangi	Leaf	Decoction	100 grams once a day
22	<i>Persea americana</i> Mill.	Lauraceae	Alpukat	Seed	Decoction	100 grams once a day
23	<i>Phaleria macrocarpa</i> (Scheff.) Boerl)	Thymelaceae	Mahkota Dewa	Fruit	Decoction	50 grams once a day
24	<i>Phyllanthus niruri</i> L.	Phyllanthaceae	Meniran	Leaf	Decoction	50 grams once a day
25	<i>Piper betle</i> L.	Piperaceae	Sirih	Leaf	Decoction	150 grams once a day
26	<i>Psidium guajava</i> L.	Myrtaceae	Jambu Biji	Leaf	Decoction	100 grams once a day
27	<i>Solanum torvum</i> Sw.	Solanaceae	Tokakak	Fruit	Decoction	100 grams once a day
28	<i>Syzygium polyanthum</i> (Wight) Walpers	Myrtaceae	Salam	Leaf	Decoction	100 grams once a day
29	<i>Vigna sinensis</i> L.	Fabaceae	Kacang Panjang	Leaf	Decoction	50 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 Bungursari Region still rely heavily on medicinal plants for their health care system, especially for the treatment of allergies with the most frequently used parts of the leaves and their use in decoctions and infusions.

REFERENCES

- Xie H, He SH. Roles of histamine and its receptors in allergic and inflammatory bowel diseases. *World J Gastroenterol*, 2005; 11(19): 2851-2857.
- Khan Z, Ansari I, Kanase V. Evaluation of antihistamine activity. *World J Pharm Res*, 2018; 7(4): 278-288.
- Gupta P, Kanase V. Antihistaminic activity of ethanolic extract of *Capparis moonii* W. fruit. *Research J Pharm Tech*, 2021; 14(8): 4403-4407.
- Monczor F, Fernandez N. Current Knowledge and perspectives on histamine H1 and H2 receptor pharmacology: Functional selectivity, receptor crosstalk, and repositioning of classic histaminergic ligands. *Mol Pharmacol*, 2016; 90(5): 640-648.
- Sakthiswary R, Zakaria Z, Das S. Diabetes mellitus: Treatment challenges and the role of some herbal therapies. *Middle-East J Sci Res*, 2014; 20(7): 786-798.
- Alkandahri MY, Sujana D, Hasyim DM, Shafirany MZ, Sulastri L, Arfania M, *et al.* Antidiabetic activity of extract and fractions of *Castanopsis costata* leaves on alloxan-induced diabetic mice. *Pharmacogn J*, 2021; 13(6): 1589-1593.
- Alkandahri MY, Arfania M, Abriyani E, Ridwanuloh D, Farhamzah, Fikayuniar L, *et al.* Evaluation of antioxidant and antipyretic effects of ethanolic extract of cep-cepan leaves (*Castanopsis costata* (Blume) A.DC). *J Adv Pharm Educ Res*, 2022; 12(3): 107-112.
- Nuraeni E, Alkandahri MY, Tanuwidjaja SM, Fadhillah KN, Kurnia GS, Indah D, *et al.* Ethnopharmacological study of medicinal plants in the Rawamerta Region Karawang, West Java, Indonesia. *Open Access Maced J Med Sci*, 2022;

- 10(A): 1560-1564.
9. Bieski IGC, Santos FR, de Oliveira RM, Espinosa MM, Macedo M, Albuquerque UP, de Oliveira Martins DT. Ethnopharmacology of medicinal plants of the Pantanal Region (Mato Grosso, Brazil). *Evid Based Complement Alternat Med*, 2012; 2012: 1-36.
 10. Cronquist A. The evolution classification of flowering plants. The New York Botanical Garden, New York, NY, USA, 1988; 2.
 11. Ahmed S, Ahmad M, Swami BL, Ikram S. A review on plants extract mediated synthesis of silver nanoparticles for antimicrobial applications: Agreen expertise. *J Adv Res*, 2016; 7(1): 17-28.