EJPMR, 2026, 13(11), 662-665 **Research Article** **Impact Factor: 8.158**

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

ISSN (O): 2394-3211
ISSN (P): 3051-2573
Coden USA: EJPMAG

ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS USED TO TREAT CHRONIC KIDNEY DISEASE IN THE SUKASARI REGION, PURWAKARTA, WEST JAVA, INDONESIA

Haura Najla Azahra, Eka Pusparini, Nildah Nur Khalivah, Diah Novita Sari, Doni Aliffadiar, Nendia Fitri Suroso, Firda Amalia Jauza, Ana Maria Fransisca, Zaeni Ahmad Rifai, Ivana Sarah Namadear, Avrillia Shasi Kirani, Wulan Mutiara Sari, Nabila Dwi Khaerunisa, Salsabila Hikmatu Sadiah, Aulia Pitria Handayani, Gina Salsabila, 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.

DOI: https://doi.org/10.5281/zenodo.24128277

How to cite this Article: Haura Najla Azahra, Eka Pusparini, Nildah Nur Khalivah, Diah Novita Sari, Doni Aliffadiar, Nendia Fitri Suroso, Firda Amalia Jauza, Ana Maria Fransisca, Zaeni Ahmad Rifai, Ivana Sarah Namadear, Avrillia Shasi Kirani, Wulan Mutiara Sari, Nabila Dwi Khaerunisa, Salsabila Hikmatu Sadiah, Aulia Pitria Handayani, Gina Salsabila, Maulana Yusuf Alkandahri*. (2026). Ethnobotanical Survey of Medicinal Plants Used To Treat Chronic Kidney Disease In The Sukasari Region, Purwakarta, West Java, Indonesia. European Journal of Pharmaceuticaland Medical Research, 13(11), 662–665.

This work is licensed under Creative Commons Attribution 4.0 International license.

Article Received on 15/10/2026 **Article Revised on 05/11/2026** **Article Published on 11/11/2026**

ABSTRACT

Chronic kidney disease (CKD) is a common progressive disease that is typically characterized by the permanent loss of nephrons and an eventual decline in glomerular filtration rate. CKD increases mortality and has a significant impact on the quality of life and the economy, which is becoming a major public health issue worldwide. This research aims to document and preserve the use of ethnomedicinal to treat CKD by communities in the Sukasari Region, Purwakarta, West Java, Indonesia. Fieldwork was carried out from April to May 2026 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 Sukasari Region to treat CKD. Among the various plant parts used, leaves (60.0%) are most frequently used in making medicines, followed by rhizomes (16.7%), fruit (10.0%), rind (6.7%), stem, and bark (respectively 3.3%). Meanwhile, the most frequently used preparation methods were decoction (63.3%), followed by infusion (23.3%), and juice (13.3%). The results of this research confirm that people in the Sukasari Region still rely heavily on medicinal plants for their health care system, especially for the treatment of CKD with the most frequently used parts of the leaves and their use in decoctions and infusions.

KEYWORDS: Traditional medicine, Ethnomedicinal plants, Sukasari Region, Chronic kidney disease.

INTRODUCTION

Chronic kidney disease **(**CKD) is an insidious, multifactorial, and slowly progressive disease, defined using altered kidney structure or dysfunction present for three months or more.[1] CKD is graded into six progressive stages (Stage 1, 2, 3a and 3b, 4, and 5) based on glomerular filtration rate (GFR).[2] While not progressive in everyone, CKD progresses in many people to total and permanent kidney failure, or Stage 5 CKD, previously termed end-stage kidney disease (ESKD).[2,3] CKD is one of the major public health burdens in developed and developing countries. Although statistics differ from country to country, the prevalence of this disease has tended to increase from year to year recently.[4] CKD increases rapidly with age, with rates among those aged 75 and over, twice as high as for 65-74 year olds, and around 7 times as high as those aged 18-54 (42%, 21% and 6%, respectively). Prevalence is generally higher in lower socioeconomic groups (14% compared with 8% in higher socioeconomic

groups),[5] and Indigenous populations often experience higher risk of CKD than the non-Indigenous populations.[6,7] Interest in the health-benefiting properties of plant-based therapies is driven, in part, by the potential to prevent onset, or ameliorate progression, of certain diseases and reduce health care costs. The financial burden to health systems for CKD hospitalizations and treatments, worldwide, is immense and expected to increase.[5,6] Complementary and alternative medicines have been used for CKD patients for many years, with reportedly disparate results for improving outcome.[8] Currently, research to obtain nephroprotective drugs derived from natural ingredients is continuing, one of which is through the exploration of active compounds from natural ingredients, especially medicinal plants that have traditionally been used by communities to treat CKD in various regions in Indonesia.[9-11] One of the Region in Indonesia that still uses herbal plants as an alternative treatment, especially to treat CKD, is the Sukasari Region. This research aims to obtain detailed information about the use of herbal plants for alternative therapy for CKD in Sukasari Region, Purwakarta, West Java, Indonesia using a field survey method.

MATERIALS AND METHODS

Study Area

Sukasari is located in Purwakarta Regency, West Java, Indonesia, with an area of 92.01 km^2. This area has an altitude of 139 meters above sea level with an average maximum air temperature of 28°C and a minimum of 26°C (humidity: approximately 60%-81%). Moreover, it is located between 06°32′ 17.3″ South Latitude and 107°18′ 43″ 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 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 April to May 2026 in the Sukasari 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.[12] The plant types obtained were grouped into families according to the Cronquist classification system, except for Pteridophyta and Gymnospermae.[13] 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

Chronic kidney disease (CKD) is a progressive health condition characterized by persistent abnormalities in kidney structure or function, resulting in a gradual decline in renal function. The progression of CKD is commonly associated with several pathological mechanisms, including oxidative stress, chronic inflammation, endothelial dysfunction, tubular injury, and renal fibrosis. These processes contribute to the deterioration of glomerular filtration capacity and the development of irreversible structural damage to renal tissue. Consequently, identifying natural products with antioxidant, anti-inflammatory, and nephroprotective properties has become an important area of pharmacological research for developing complementary therapeutic approaches to CKD.[14,15] The present ethnomedicinal study documented 30 plant species traditionally used by communities in Sukasari, Purwakarta, West Java, Indonesia to treat CKD (Table 1). Among the various plant parts used, leaves (60.0%) are most frequently used in making medicines, followed by rhizomes (16.7%), fruit (10.0%), rind (6.7%), stem, and bark (respectively 3.3%). Meanwhile, the most frequently used preparation methods were decoction (63.3%), infusion (23.3%), and juice (13.3%). This finding indicates the substantial role of medicinal plants in traditional healthcare practices and provides an important foundation for identifying potential natural resources for further pharmacological investigation.

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

No	Species	Family	Local name	Parts used	Mode of administration	Dosage of use
1	*Allium cepa* L.	Amaryllidaceae	Bawang bombai	Rhizome	Juice	10 grams once a day
2	*Allium fistulosum* L.	Amaryllidaceae	Bawang Daun	Leaf	Decoction	20 grams once a day
3	*Allium sativum* L.	Alliaceae	Bawang Putih	Rhizome	Juice	20 grams once a day
4	*Annona muricata* L.	Annonaceae	Sirsak	Leaf	Infusion	10 grams once a day
5	*Apium graveolens* L.	Apiaceae	Seledri	Leaf	Infusion	10 grams once a day
6	*Averrhoa carambola* L.	Oxalidaceae	Belimbing	Fruit	Infusion	50 grams once a day
7	*Boerhavia diffusa* L.	Nyctaginaceae	Punarnava	Leaf	Decoction	5 grams once a day
8	*Chromolaena odorata* L.	Asteraceae	Balakacida	Leaf	Decoction	50 grams once a day
9	*Cinnamomum verum* L	Lauraceae	Kayu Manis	Bark	Decoction	25 grams once a day
10	*Cucumis sativus* L.	Cucurbitaceae	Timun	Fruit	Juice	20 grams once a day
11	*Curcuma longa* L.	Zingiberaceae	Kunyit	Rhizome	Decoction	10 grams once a day
12	*Curcuma xanthorhiza* Roxb	Zingiberaceae	Temulawak	Rhizome	Decoction	10 grams once a day
13	*Cymbopogon nardus*	Poaceae	Sereh Wangi	Leaf	Decoction	5 grams once a day
14	*Dracaena angustifolia* (Medik.) Roxb.	Asparagaceae	Suji	Leaf	Infusion	25 grams once a day
15	*Elephantopus scaber* Linn.	Asteraceae	Tapak Liman	Leaf	Decoction	5 grams once a day
16	*Garcinia mangostana* L.	Clusiaceae	Manggis	Rind	Decoction	15 grams once a day
17	*Kaempferia galanga* L.	Zingiberaceae	Kencur	Seed	Decoction	10 grams once a day
18	*Mentha longifolia* L.	Lamiaceae	Mint	Leaf	Infusion	20 grams once a day
19	*Morus* L.	Moraceae	Murbei	Leaf	Infusion	15 grams once a day
20	*Muntingia calabura* L.	Muntingiaceae	Kersen	Leaf	Decoction	10 grams once a day
21	*Ocimum sanctum* L.	Lamiaceae	Kemangi	Leaf	Decoction	5 grams once a day
22	*Orthosiphon aristatus* (Blume) Miq.	Lamiaceae	Kumis Kucing	Leaf	Decoction	10 grams once a day
23	*Pandanus amaryllifolius* Roxb.	Pandanaceae	Pandan	Leaf	Infusion	50 grams once a day
24	*Persea americana* Mill.	Lauraceae	Alpukat	Fruit	Juice	10 grams once a day
25	*Piper betle* L.	Piperaceae	Sirih	Leaf	Decoction	25 grams once a day
26	*Psidium guajava* L.	Myrtaceae	Jambu biji	Leaf	Decoction	50 grams once a day
27	*Punica granatum* L.	Lythraceae	Delima	Rind	Decoction	25 grams once a day
28	*Sandoricum koetjape*	Meliaceae	Kecapi	Leaf	Decoction	50 grams

	Merr					once a day
29	*Terminalia catappa* L.	Combretaceae	Ketapang	Leaf	Decoction	10 grams once a day
30	*Zingiber officinale* Rosc.	Zingiberaceae	Jahe	Rhizome	Decoction	50 grams once a day

CONCLUSIONS

The ethnomedicinal findings demonstrate that communities in Sukasari, Purwakarta, West Java, utilize a diverse range of medicinal plants that may serve as valuable resources for future nephroprotective research. The findings provide an ethnopharmacological foundation for selecting promising plant species for further investigation. The integration of traditional knowledge with phytochemical characterization, experimental pharmacology, toxicological evaluation, and clinical research may facilitate the development of scientifically validated natural products with potential applications in complementary CKD management.

REFERENCES

1. Levey AS, Coresh J. Chronic kidney disease. *Lancet*., 2012; 379(9811): 165-180.
2. Chen TK, Knicely DH, Grams ME. Chronic Kidney Disease Diagnosis and Management: A Review. *JAMA*., 2019; 322(13): 1294-1304.
3. Levey AS, Eckardt KU, Dorman NM, Christiansen SL, Hoorn EJ, Ingelfinger JR, *et al*. Nomenclature for kidney function and disease: report of a kidney disease: Improving global outcomes (KDIGO) consensus conference. *Kidney Int*., 2020; 97(6): 1117-1129.
4. Xie Y, Bowe B, Mokdad AH, Xian H, Yan Y, Li T, *et al*. Analysis of the global burden of disease study highlights the global, regional, and national trends of chronic kidney disease epidemiology from 1990 to 2016. *Kidney Int*., 2018; 94(3): 567-581.
5. Jha V, Garcia-Garcia G, Iseki K, Li Z, Naicker S, Plattner B, *et al*. Chronic kidney disease: global dimension and perspectives. *Lancet*, 2013; 382(9888): 260-272.
6. Glassock RJ, Warnock DG, Delanaye P. The global burden of chronic kidney disease: estimates, variability and pitfalls. *Nat Rev Nephrol*., 2017; 13(2): 104-114.
7. Hoy WE, Kincaid-Smith P, Hughson MD, Fogo AB, Sinniah R, Dowling J, *et al*. CKD in Aboriginal Australians. *Am J Kidney Dis*., 2010; 56(5): 983-993.
8. Zhong Y, Deng Y, Chen Y, Chuang PY, Cijiang He J. Therapeutic use of traditional Chinese herbal medications for chronic kidney diseases. *Kidney Int*., 2013; 84(6): 1108-1118.
9. Alkandahri MY, Patala R, Berbudi A, Subarnas A. Antimalarial activity of curcumin and kaempferol using structure based drug design method. *J Adv Pharm Educ Res*., 2021; 11(4): 86-90.
10. 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.
11. Nuraeni E, Alkandahri MY, Tanuwidjaja SM, Fadhilah 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.
12. 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.
13. Cronquist A. The evolution classification of flowering plants. The New York Botanical Garden, New York, NY, USA, 2nd edition., 1988.
14. Li Q, Xing C, Yuan Y. Mitochondrial Targeting of herbal medicine in chronic kidney disease. *Front Pharmacol*, 2021; 12: 632388.
15. Tian J, Huang Y, Wu T, Huang, HD, Ko KM, Zhu BT, *et al*. The use of chinese yang/qi-invigorating tonic botanical drugs/herbal formulations in ameliorating chronic kidney disease by enhancing mitochondrial function. *Front Pharmacol*, 2021; 12: 622498.