

**ETHNOPHARMACOLOGICAL STUDY OF WOUND-HEALING IN THE JATILUHUR  
REGION, PURWAKARTA, WEST JAVA, INDONESIA**

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**ABSTRACT**

Skin is the protective organs of the body that extends to whole body parts and prevents entry of pathogens. It minimized fluid loss, protect the body and act as thermal barrier. Hence, in the case of a wound, it is crucial to restore the functionality of this multipurpose organ. Maintaining skin integrity and restoring injured tissues. This research aims to document and preserve the use of ethnomedicine to treat wounds by people in the Jatiluhur 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](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 Jatiluhur Region for treating wounds. Among the various plant parts used, leaves (73.3%) are most often used in making wound medicine, followed by rhizomes (10%), stems, seeds, fruit, rind, and flowers (3.3% respectively). Meanwhile, the preparation method most often used is topical (100%). The results of this research confirm that people in the Jatiluhur Region still rely heavily on medicinal plants for their health care system, especially for treating wounds using the most frequently used parts of the leaves and using them topically.

**KEYWORDS:** Traditional medicine, Ethnomedicinal plants, Jatiluhur Region, Wound Healing.

**INTRODUCTION**

Wounds damage the protective function of the skin, accompanied by loss of continuity of epithelial tissue, with or without injury to other tissues. Treatment of burns includes preventing infection and providing an opportunity for the remnants of epithelial cells to proliferate and cover the wound surface. Wounds have a high risk of disease, so preoperative antiseptic techniques are needed to reduce infection in the wound area. Many antimicrobial ointments have been sold to reduce wound infection; however, these topical antimicrobial agents have some side effects and are only partially effective in healing the wound.<sup>[1]</sup> Therefore, new drugs are needed to heal wounds. Meanwhile, more than three-quarters of the world's population has relied on medicinal plants for wound care, and more than 400 species of medicinal plants have been reported to have wound-healing activity.<sup>[2-4]</sup> Medicinal plants are the most important and sometimes the only source of wound treatment. This is because medicinal plants are culturally acceptable, easy to access, and cheap compared to modern medicine.<sup>[5-7]</sup>

Indonesia is the second largest country in the world with forest biodiversity, where there are 28,000 plant species and 2,500 of these species are medicinal plants.<sup>[8-10]</sup> Currently, research to obtain new anti-wound drugs derived from natural ingredients continues to be carried out, one of which is through exploring active compounds from natural ingredients, especially medicinal plants which have traditionally been used by people to treat wounds in various regions in Indonesia.<sup>[11-13]</sup> One of the Region in Indonesia that still uses herbal plants as an alternative treatment, especially for treating wounds, is the Jatiluhur Region. This research aims to obtain detailed information about the use of herbal plants for alternative wound therapy in Jatiluhur Region, Purwakarta, West Java, Indonesia using a field survey method.

**MATERIALS AND METHODS****Study Area**

Jatiluhur is located in Purwakarta Regency, West Java, Indonesia, with an area of 60.11 km<sup>2</sup>. This area has an

altitude of 114.5 meters above sea level with an average maximum air temperature of 28°C and a minimum of 20°C. Jatiluhur is located between 06°31'48" South Latitude and 107°24'41" 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 2,353 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 Jatiluhur 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 about local plant names, plant parts used, preparation methods and administration methods (e.g., infusion, topical, 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>[14]</sup> The plant types obtained were grouped into families according to the Cronquist classification system, except for Pteridophyta and Gymnospermae.<sup>[15]</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 wounds (Table 1). This shows that the study location is affordable in terms of biodiversity. Among the various plant parts used, leaves (73.3%) are most often used in making wound medicine, followed by rhizomes (10%), stems, seeds, fruit, rind, and flowers (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.<sup>[16]</sup> Meanwhile, the preparation method most often used is topical (100%). These results are in line with previous research which reported that the form of traditional medicine for wound treatment that is most widely used by the community is topical.<sup>[17]</sup>

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

| No | Species                                  | Family           | Local name    | Parts used | Mode of administration | Dosage of use            |
|----|--|------------------|---------------|------------|------------------------|--------------------------|
| 1  | <i>Aglaia odorata</i> Lour               | Meliaceae        | Pacar Cina    | Leaf       | Topical                | 2 grams once a day       |
| 2  | <i>Allium cepa</i> L.                    | Amaryllidaceae   | Bawang bombai | Rhizome    | Topical                | 2 grams once a day       |
| 3  | <i>Allium sativum</i> L.                 | Alliaceae        | Bawang Putih  | Rhizome    | Topical                | 3 grams once a day       |
| 4  | <i>Aloe vera</i> L.                      | Xanthorrhoeaceae | Lidah buaya   | Stem       | Topical                | 15 milligrams once a day |
| 5  | <i>Anredera cordifolia</i> (Ten) Steenis | Basellaceae      | Binahong      | Leaf       | Topical                | 3 grams once a day       |
| 6  | <i>Areca catechu</i> L.                  | Arecaceae        | Pinang        | Seed       | Topical                | 15 grams once a day      |
| 7  | <i>Carica papaya</i> L.                  | Caricaceae       | Pepaya        | Fruit      | Topical                | 10 grams once a day      |
| 8  | <i>Catharanthus roseus</i> L.            | Apocynaceae      | Tapak Dara    | Leaf       | Topical                | 5 grams once a day       |
| 9  | <i>Centella asiatica</i> (L.) Urban      | Apiaceae         | Pegagan       | Leaf       | Topical                | 15 grams once a day      |
| 10 | <i>Chromolaena odorata</i> L.            | Asteraceae       | Kirinyuh      | Leaf       | Topical                | 2 grams once a day       |
| 11 | <i>Citrus limon</i> (L.) Burm. f.        | Rutaceae         | Lemon         | Leaf       | Topical                | 2 grams once a day       |
| 12 | <i>Cordyline fruticosa</i> (L.) A.Chev.  | Asparagaceae     | Andong Merah  | Leaf       | Topical                | 20 grams once a day      |
| 13 | <i>Garcinia mangostana</i> L.            | Clusiaceae       | Manggis       | Rind       | Topical                | 10 grams once a day      |
| 14 | <i>Gynura divaricata</i> (L.) DC         | Asteraceae       | Daun Dewa     | Leaf       | Topical                | 5 grams once a day       |
| 15 | <i>Imperata cylindrica</i> L.            | Poaceae          | Alang-alang   | Leaf       | Topical                | 20 grams once a day      |
| 16 | <i>Jatropha curcas</i> Linn.             | Euphorbiaceae    | Jarak         | Leaf       | Topical                | 5 grams once a day       |
| 17 | <i>Jatropha multifida</i> L.             | Euphorbiaceae    | Jarak Tintir  | Leaf       | Topical                | 30 grams once a day      |
| 18 | <i>Kalanchoe pinnata</i> Pers            | Crassulaceae     | Cocor Bebek   | Leaf       | Topical                | 10 grams once a day      |
| 19 | <i>Moringa oleifera</i> L.               | Moringaceae      | Kelor         | Leaf       | Topical                | 50 grams once a day      |
| 20 | <i>Orthosiphon stamineus</i> Benth       | Lamiaceae        | Kumis Kucing  | Leaf       | Topical                | 2 grams once a day       |
| 21 | <i>Parkia speciosa</i> Hassk.            | Fabaceae         | Petai         | Leaf       | Topical                | 2 grams once a day       |

|    |   |                |             |         |         |                     |
|----|---|----------------|-------------|---------|---------|---------------------|
| 22 | <i>Persea americana</i> Mill.               | Lauraceae      | Alpukat     | Leaf    | Topical | 5 grams once a day  |
| 23 | <i>Pilea melastomoides</i> (Poir.) Bl       | Urticaceae     | Pohpohan    | Leaf    | Topical | 3 grams once a day  |
| 24 | <i>Piper betle</i> L.                       | Piperaceae     | Sirih       | Leaf    | Topical | 10 grams once a day |
| 25 | <i>Portulaca oleracea</i> L.                | Portulacaceae  | Krokot      | Leaf    | Topical | 10 grams once a day |
| 26 | <i>Pyrostegia venusta</i> (Ker Gawl.) Miers | Bignoniaceae   | Jalaran Api | Flower  | Topical | 5 grams once a day  |
| 27 | <i>Terminalia catappa</i> L.                | Combretaceae   | Ketapang    | Leaf    | Topical | 5 grams once a day  |
| 28 | <i>Tinospora crispa</i> L. Miers            | Menispermaceae | Bratawali   | Leaf    | Topical | 10 grams once a day |
| 29 | <i>Vernonia amygdalina</i> Del.             | Asteraceae     | Daun Afrika | Leaf    | Topical | 5 grams once a day  |
| 30 | <i>Zingiber officinale</i> Rosc.            | Zingiberaceae  | Jahe        | Rhizome | Topical | 5 grams once a day  |

## CONCLUSIONS

The results of this research confirm that people in the Jatiluhur Region still rely heavily on medicinal plants for their health care system, especially for treating wounds using the most frequently used parts of the leaves and using them topically.

## REFERENCES

- Muharni M, Annisa A, Fitriya F, Anas M. Wound healing activity of *Dillenia ochreatea* leaves ethanol extract in Wistar rats. *J Pharm Pharmacogn Res*, 2022; 10(5): 896-904.
- Zeng Q, Xie H, Song H, Nie F, Wang J, Chen D, Wang F. In vivo wound healing activity of *Abrus cantoniensis* extract. *Evid Based Complement Alternat Med*, 2016; 2016: 1-7.
- Sagbo IJ, Afolayan AJ, Bradley G. Antioxidant, antibacterial and phytochemical properties of two medicinal plants against the wound infecting bacteria. *Asian Pac J Trop Biomed*, 2017; 7(9): 817-825.
- Firdous SM, Sautya D. Medicinal plants with wound healing potential. *Bangl J Pharmacol*, 2018; 13(1): 41-52.
- Alkandahri MY, Berbudi A, Subarnas A. Active compounds and antimalaria properties of some medicinal plants in indonesia – A review. *Sys Rev Pharm*, 2018; 9(1): 64-69.
- Alkandahri MY, Maulana YE, Subarnas A, Kwarteng A, Berbudi A. Antimalarial activity of extract and fractions of *Cayratia trifolia* (L.) Domin. *Int J Pharm Res*, 2020; 12(1): 1435-1441.
- Setiawan MA, Fuadah TZ, Ningsih DU, Nabil M, Nababan A, Nurhabibah I, et al. The genus *Begonia* (*Begoniaceae*): A review of pharmacological studies. *Eur J Biomed Pharm Sci*, 2024; 11(3): 04-07.
- 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)Suppl: 1589-1593.
- Alkandahri MY, Kusumiyati K, Renggana H, Arfania M, Frianto D, Wahyuningsih ES, et al. Antihyperlipidemic activity of extract and fractions of *Castanopsis costata* leaves on rats fed with high cholesterol diet. *RASĀYAN J Chem*, 2022; 15(4): 2350-2358.
- Zulkarnaen P, Fadila N, Fadhilah LN, Kartika, Kardila K, Laely N, et al. Pharmacological activity of *Selaginella doederleinii* Hieron: An updated review. *Eur J Pharm Med Res*, 2024; 11(3): 17-20.
- 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.
- 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, 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.
- 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.
- Cronquist A. The evolution classification of flowering plants. The New York Botanical Garden, New York, NY, USA, 2<sup>nd</sup> edition, 1988.
- 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.
- Albahri G, Badran A, Hijazi A, Daou A, Baydoun E, Nasser M, Merah O. The therapeutic wound healing bioactivities of various medicinal plants. *Life (Basel)*, 2023; 13(2): 1-20.