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Ethnopharmacological Study of Medicinal Plants in Kedungpoh Village, Nglipar Sub-district, Gunungkidul District, Special Region of Yogyakarta

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ABSTRACT

The scientific study of ethnopharmacology investigates the medicinal uses of plants by different ethnic groups and plays a crucial role in the early-stage drug discovery process by identifying potential drug candidates from traditional remedies. The transmission of knowledge concerning the diversity of plant species and their utilization is typically an intergenerational process, facilitating the preservation of cultural heritage and the transfer of experiential knowledge. The present study was conducted in the village of Kedungpoh, Nglipar, Gunungkidul. The objective of this study is to investigate the utilisation, management and comprehension of medicinal plants within the Kedungpoh village in Gunungkidul.The research methodology comprised of observational studies and interviews with local residents. The results revealed the utilization of 24 plant species, which classified into 17 distinct families by the local community. The utilization of these plants encompassed various plant organs, including leaves, stems, roots, fruits, and rhizomes, which were employed in different processing methods, such as crushing, boiling, or rubed. The most prevalent and utilized plant families were Asteraceae, which are notable for their abundance of bioactive compounds, including flavonoids, alkaloids, and essential oils, which have been demonstrated to be efficacious in addressing a wide range of health concerns. This study provides substantial support for scientific laboratory research into the safety, quality and efficacy of traditional medicine practices, with a view to further utilization of traditional medicine, whilst also protecting the intellectual property rights of traditional knowledge holders.

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1. Introduction

Ethnopharmacological investigations represent a cornerstone in the discovery and development of novel therapeutic agents, bridging the gap between traditional medicine systems and contemporary

pharmaceutical science. Ethnobotanical studies are essential for understanding how different cultures utilize plant resources for various purposes, including medicine, food, art, construction, and rituals, thus playing a crucial role in bioprospecting novel compounds and identifying potent biomarkers (Mathew et al., 2017). These studies emphasize the complex interactions between biotic and abiotic factors within a habitat, connecting indigenous medicinal systems with anthropological activities. Ethnopharmacology study lead to beyond mere documentation of traditional practices; it involves rigorous scientific evaluation of the efficacy and safety of traditionally used medicinal plants, often necessitating collaborative efforts from ethnobotanists, anthropologists, pharmacists, and physicians (Gunarti et al., 2021). The discipline seeks to ascertain that traditional knowledge is protected and remains an integral part of a culture, ensuring equitable distribution of material and immaterial benefits if commercial products are developed from such knowledge. By examining plants used by indigenous cultures, ethnopharmacologists can identify species with potential therapeutic value, which can then be further investigated through laboratory and clinical studies (Oktoba, 2018 ; Oktoba, 2018). John William Harshberger, a botanist from the early 20th century, is credited with first proposing the idea of ethnobotany (Rahman et al., 2019). He determined that examining how indigenous cultures use plants offered insightful information and potentially fresh avenues for research.

Research on ethnopharmacology examines community knowledge of medicinal plants, passed down from generation to generation, and their use in maintaining health. The process of ethnopharmacological research typically involves several key steps, commencing with detailed ethnobotanical surveys to document the plants used for medicinal purposes by specific communities (Ajayi et al., 2020). As well as documenting the different plants used, cultural aspects are also taken into account in determining the categorization, classification and identification of medicinal plants. These aspects include the categorization of plants used as traditional medicine (ethnobiology), the social medical field in society (ethnomedicine) and the stages of drug production (ethnopharmaceuticals) (Fadhil et al., 2024). These surveys often involve interviews with traditional healers and community members to gather information on plant identification, preparation methods, dosages, and therapeutic uses. Plant specimens are collected, identified, and preserved for further analysis, and the collected data are compiled into ethnobotanical databases (Brouwer et al., 2005).

Indonesia, a country comprising an archipelago of islands, is renowned for its biodiversity and cultural mosaic. This makes it a valuable location for ethnopharmacological research, as it is home to a rich variety of traditional healing practices. These practices offer a significant potential source of therapeutic agents and provide insights into the relationship between plants, people, and their cultural practices. (Hidayani et al., 2021; Pasaribu et al., 2020). Indonesia's diverse ethnic groups, each possessing unique knowledge of medicinal plants, offer invaluable insights into the potential of natural resources for healthcare applications (Hidayat et al., 2021; Mathew et al., 2017). Traditional medicine in Indonesia represents the accumulated knowledge, practices, and experiences passed down through generations, grounded in the beliefs and cultural contexts of different communities (Sari et al., 2018). It plays a vital role as an alternative treatment option while simultaneously offering insight into the local wisdom of a community group. The consequence of this is the presence of a plurality of cultures, traditions and local wisdoms, each of which possesses its own distinctiveness.The Indonesian archipelago is home to an abundance of plant species, with an estimated range of 25,000 to 30,000 individual species. This biodiversity is further compounded by the presence of an estimated 300 to 700 distinct ethnic groups, each with their own unique cultural traditions and local wisdom (Anonym, 2023). It is estimated that approximately 80% of the world's medicinal plants are indigenous to Indonesia, a fact that has led to the country being referred to as a "living laboratory" (Fadhil et al., 2024).

The role of ethnic diversity in the variation of plant processing for traditional medicine in each region is of significant importance. The Gunungkidul community in Yogyakarta is traditionally a close-knit community that strongly upholds the values of their ancestors, including knowledge about the use of plants and biological resources for medicinal purposes, which greatly supports ethnopharmacological studies (Nahdi & Kurniawan, 2019). For instance, research conducted by Falah & Dorohungi (2016) revealed the Gunungkidul community's utilization of medicinal plants such as eucalyptus leaves, processed into essential oils to warm the body; papaya leaves, boiled and consumed to treat malaria; turmeric, employed as a remedy for stomach aches and wound healing. Moreover, a plethora of other

plant species have been utilized as medicinal remedies by the community. Kedungpoh, a village of Gunungkidul, has been identified as a site of significant ethnopharmacological significance. This village was chosen because its residents still preserve the tradition of using medicinal plants for everyday medicine. Renowned for its noble traditions, the practice of using medicinal plants for traditional medicine is still used in everyday life. The present study aims to explore information on medicinal plants in Kedungpoh village, Gunungkidul, with a focus on how medicinal plants are used, managed and understood by the local community.

2. Methods

The research was conducted in Kedungpoh Lor and Kedungpoh Kidul Sub Village, Kedungpoh Village, Nglipar District, Gunungkidul Regency, Yogyakarta (7°51'41"S - 110°36'47"E) **(Figure 1).** The datas collection was done in 24 -25 August 2024. The research conducted by a descriptive exploratory approach (Heck, 1998), which involved the conduction of interviews and direct observation. The tools used in this study were questionnaire, logbook, stationery, camera, clip-on microphone. The cultivation technique employed in this study is intended for the conservation of the plant material obtained. It is evident that a number of tools are required for this undertaking. Such tools include, but are not limited to, scissors, a trowel, a polybag and a name tag..The interview was conducted with several residents, such as women who are members in Kelompok Wanita Tani (KWT) and Pembinaan Kesejahteraan keluarga (PKK) who were selected as respondents by asking several questions, including the respondent's name, the local name of the plant, the plant's use, the parts used, and the method of use. Thematic analysis was employed to explore the community's knowledge about the use of plants in the area as medicine, and all information was recorded in a logbook. To ensure that the data was completely collected, a video recording was also carried out. The collected interview data was then collated and categorized to ensure enhanced structure and facilitate the subsequent analysis. The subsequent method entailed direct observation of the forest to identify different types of plants that had been obtained previously. The collected plants were photographed in their entirety using a camera, and additional information regarding their benefits, the parts of the plant used, and their usage was documented. Following the photographic documentation, a selection of the plants was planted in the Kedungpoh food estate “Lumbung Mataram” in Kedungpoh village. All plants successfully collected from the forest were planted in polybags and given information in the form of local names, scientific names, and planting dates.

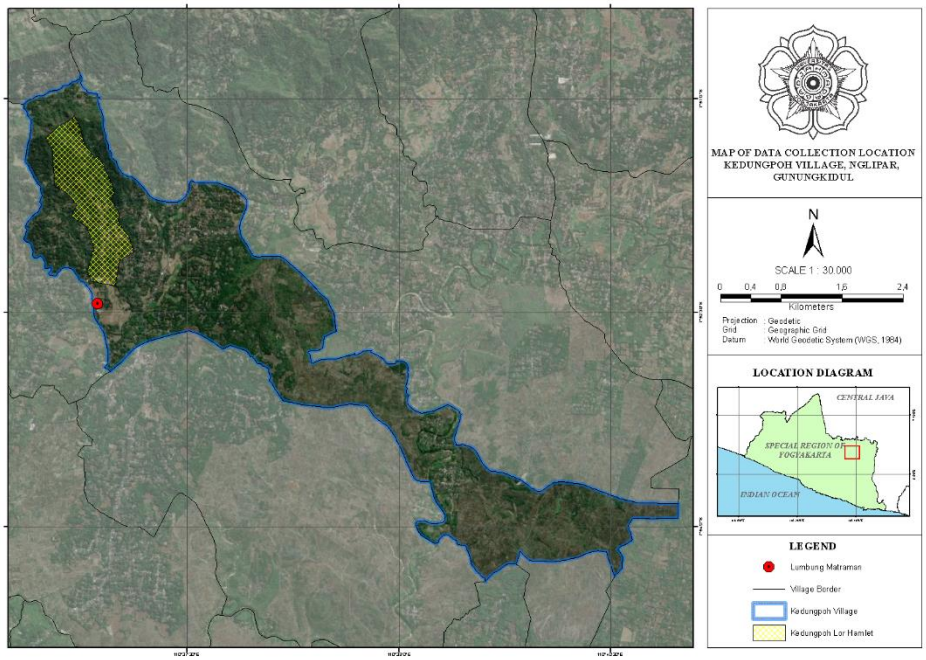

Figure 1. Satellite Image of Data Collection Location in Kedungpoh Lor and Kedungpoh Kidul, Kedungpoh, Nglipar, Gunungkidul

The data analysis in this study was conducted using a descriptive analytical approach. The collected data were systematically recorded and organized, then summarized according to specific categories. These categories included plant family groups, the parts of the plants utilized, and their respective uses within the local community.

3. Results and Discussion

3.1. Medicinal Plant Identification

The sampling site was situated in the area encompassing the community forest and residential areas, and the research method involved conducting interviews with the surrounding community. The analysis of the collected data resulted in the identification of 17 families of medicinal plants, encompassing approximately 24 species **(Figure 2)**. As demonstrated in **Table 1**, a total of 24 plant species are utilized as medicinal substances by the Kedungpoh community, which classified into 17 distinct families. The Asteraceae family is the most commonly used by the community. This is followed by the Acanthaceae, Fabaceae and Zingiberaceae families. The Acanthaceae family includes Selainoko (*Andrographis paniculata*) and Tajibeling (*Strobilanthes crispa*). The Asteraceae family comprises Olokopok (*Chromolaena odorata*), Tempuyung (*Sonchus arvensis*) and Rondongoprol/Songgolangit (*Tridax procumbens*), and the Fabaceae family consists of Kleresede (*Gliricidia sepium*) and Patiset (*Uraria crinita*).

Table 1. Medicinal plants used by the Kedungpoh Village community

Nr	Scientific Name	Local Name	Family	Plant part Used	Utilization
1	*Chromolaena odorata* (L.) R.M.King & H.Rob.	Olokopok	Asteraceae	Leaves	Heals external wounds
2	*Stachytarpheta jamaicensis* (L.) Vahl	Telenceng biru	Verbenaceae	Leaves	Treats diabetes.
3	*Ardisia elliptica* Thunb.	Rempeni	Primulaceae	Leaves	Can be consumed in emergency situations and has cancer-fighting properties
4	*Melastoma malabathricum* L.	Sengganen/Senggani	Melastomataceae	Leaves	Promotes breast milk production and helps with diarrhea
5	*Andrographis paniculata* (Burm.f.) Wall. ex Nees	Sambiloto	Acanthaceae	Leaves	Reducing fever and regulating cholesterol levels.
6	*Tridax procumbens* L.	Rondo ngoprol / Songgolangit	Asteraceae	Leaves	Relieving gout symptoms
7	*Litsea glutinosa* (Lour.) C.B.Rob.	Adem mati	Lauraceae	Leaves	Eases postpartum pain
8	*Panicum repens* L.	Lempuyangan	Poaceae	Leaves Stem	An ingredient in traditional herbal medicine
9	*Cymbopogon nardus* (L.) Rendle	Akar wangi	Poaceae	Root	Helps with rheumatism, arthritis, and muscle stiffness
10	*Gliricidia sepium* (Jacq.) Kunth ex Walp.	Kleresede	Fabaceae	Leaves	Aids digestion when combined with Moringa and Indigo leaves
11	*Elephantopus scaber* L.	Taji beling	Asteraceae	Leaves	Treating kidney stones
12	*Paederia foetida* L.	Sembukan	Rubiaceae	Leaves	Used in herbal health formulations

13	*Anomianthus dulcis* (Dunal) J.Sinclair	Kala ambing	Annonaceae	Leaves	As a natural deworming remedy for children.
14	*Uraria crinita* (L.) Desv. ex DC.	Patiset	Fabaceae	Leaves	Used to treat severe infected wounds in animals
15	*Muehlenbeckia platyclada* (F.Muell.) Meisn.	Sambung otot	Polygonaceae	Stem Sap	Relieves bone fracture pain
16	*Anredera cordifolia* (Ten.) Steenis	Binahong	Basellaceae	Leaves	Helps heal external wounds and treats kidney stones
17	*Centella asiatica* (L.) Urb.	Pegagan	Apiaceae	Leaves	As an ingredient in herbal medicine
18	*Triphasia trifolia* (Burm.f.) P.Wils.	Jeruk kingkit	Rutaceae	Leaves Fruit	Improves digestion, supports heart health, and helps prevent cancer
19	*Kaempferia galanga* L.	Kencur	Zingiberaceae	Rhizome	Lowers blood pressure, reduces stress, and helps prevent cancer
20	*Sonchus arvensis* L.	Tempuyung	Asteraceae	Leaves	Treats kidney stones, prevents cancer, and combats inflammatory diseases
21	*Dracaena angustifolia* (Medik.) Roxb.	Daun Suji	Asparagaceae	Leaves	Strengthens the immune system, relieves menstrual cramps, and soothes muscle pain
22	*Zingiber officinale* Roscoe	Jahe	Zingiberaceae	Rhizome	Improves blood circulation, lowers cholesterol, and relieves acid reflux
23	*Jatropha multifida* L.	Yodium	Euphorbiaceae	Leaves	Speeds up energy metabolism, supports stable thyroid hormone function, and addresses thyroid disorders
24	*Pimpinella pruatjan* Molk.	Purwaceng	Apiaceae	Root	Boosts stamina and alleviates menopause symptoms

This study identified 24 species of medicinal plant species utilized by the people of the village of Kedungpoh for the treatment of illnesses and the preparation of health remedies **(Figure 2)**. The plants belong to 17 different families, each of which possesses distinctive medicinal properties. Plant parts are commonly employed: leaves, roots, stems, sap, fruits, and rhizomes. The most common families were Asteraceae (four species),), Apiaceae (two species), Euphorbiaceae (two species), Fabaceae (two species), Poaceae (two species) and Zingiberaceae (two species). There were also 11 other families with one species each: Acanthaceae, Basellaceae, Melastomataceae, Lauraceae, , Polygalaceae, Polygonaceae Primulaceae, Rubiaceae, Rutaceae, Verbenaceae and Asparagaceae **(Figure 4)**.

In-depth interviews with local communities revealed that some member of Asteraceae family is utilized as a medicinal resource due to its long-standing role in traditional medicine for treating various ailments, based on hereditary experience. Furthermore, the local environment has been found to be conducive to the natural propagation of these plants, particularly within village forests.

Research by Fitriani et al., (2020) has demonstrated that the Asteraceae family is the most commonly found and used due to its ability to contain compounds such as flavonoids, alkaloids and essential oils, which have been found to be effective in overcoming various health problems.

In Kedungpoh Village, the leaf is the most widely utilized plant organ by the community. This finding aligns with the findings of ethnobotany studies conducted in other regions, which indicate that leaf organs are the most commonly used plant parts in medicinal plants. For instance, in Tanjung Village, Natuna Regency, the simplicity of preparation and the efficacy of leaf organs are notable. The predominance of leaves as the primary organ of choice can be attributed to their role as the site of photosynthesis, which provides a substantial source of organic substances. It is further postulated that organic substances, including essential oils, phenols, and potassium compounds, possess properties that may contribute to disease healing (Asmita *et al.*, 2023).


(a)


(b)


(c)


(d)


(e)


(f)


(g)


(h)


(i)


(j)


(k)


(l)

(m) (n) (o) (p)

(q) (r) (s) (t)

(u) (v) (w) (x)

Figure 2. Species of medicinal plants used by the people of Kedungpoh Village (Personal Documentation, 2024): *Chromolaena odorata* (a), *Stachytarpheta jamaicensis* (b), *Ardisia elliptica* (c), *Melastoma malabathricum* (d), *Andrographis paniculata* (e), *Tridax procumbens* (f), *Litsea glutinosa* (g), *Panicum repens* (h), *Cymbopogon nardus* (i), *Gliricidia sepium* (j), *Elephantopus scaber* (k), *Paederia foetida* (l), *Anomianthus dulcis* (m), *Uraria crinita* (n), *Muehlenbeckia platyclada* (o), *Anredera cordifol* (p), *Centella asiatica* (q), *Triphasia trofilia* (r), *Kaempferia galanga* (s), *Sonchus arvensis* (t), *Dracaena angustifolia* (u), *Zingiber officinale* (v), *Jatropha multifida* (w), and *Pimpinella pruatjan* (x).

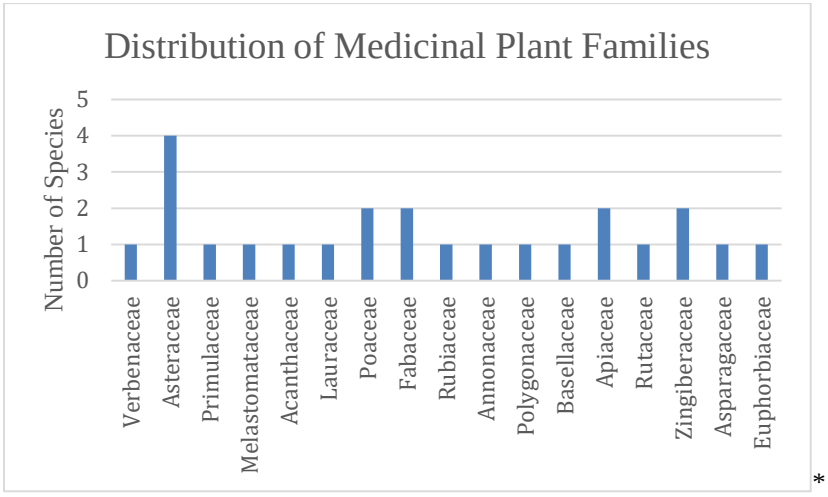

Figure 3. The distribution of medicinal plant families in Kedungpoh Village

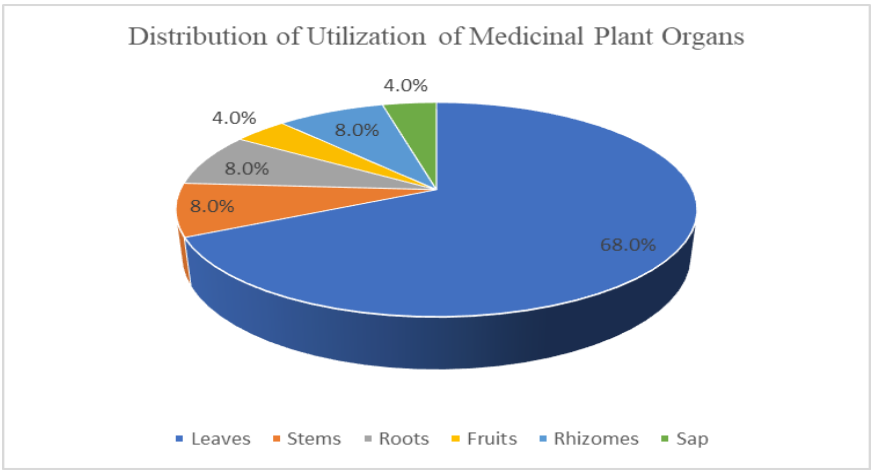

Figure 4. Distribution of utilization of medicinal plant organs in Kedungpoh Village

The most frequently utilized plant organ is the leaf organ, constituting 68% of the medicinal plants in the Kedungpoh that are employed for their leaves. Conversely, stems and roots account for 8%, while the utilisation of fruit and sap is the least prevalent at 4% (**Figure 4**).

In community life, several wild or local plants have been widely used in the health sector. The utilization of diverse plant species as therapeutic agents in the health sector is a subject that falls within the domain of ethnopharmacology. This field of study focuses on the therapeutic benefits of plants as medicines or potions that are traditionally processed and utilized by local communities for the treatment and cure of specific diseases. The knowledge of utilizing medicinal plants is typically transmitted through generations by indigenous communities within a specific region (Hadju & Makaba, 2016). This ethnopharmacological tradition is also evident in the Gunungkidul community. This study has identified several plants that have been utilized by the Kedungpoh community in Gunungkidul as traditional medicine or health potions over the course of many generations. This study employs a combination of observational methods and direct interviews with the residents of Kedungpoh village. The study's findings suggest that the Gunungkidul community possesses a rich array of medicinal plants, indicating a diverse and well-developed knowledge of ethnobotany.

The Kedungpoh village community uses a different methods of processing or mixing plants before using them as medicine, depending on the species of plant and the type of ailment being treated. Examples of plants used include Sambiloto (*Andrographis paniculata*), Taji beling (*Strobilanthes crispa*), Rondongoprol/Songgolangit (*Tridax procumbens*), Binahong (*Anredera cordifol*), Sengganen/Senggani (*Melastoma malabathricum*). The leaves of these plants are boiled to extract the water, which is then used in the preparation of herbal medicines. In addition to extraction, there are other plants that are used as basic ingredients in the production of herbal medicines, such as Pegagan (*Centella asiatica*), Lempuyangan (*Panicum repens*), Sembukan (*Paederia foetida*), Kencur

(*Kaempferia galanga*), Tempuyung (Sonchus arvensis), Pandanus leaf (*Dracaena angustifolia*), Ginger (*Zingiber officinale*), Iodine (*Jatropha multifida*) and Purwaceng (*Pimpinella pruatjan*).
The utilization of Olokopok (*Chromolaena odorata*), Patiset (*Uraria crinita*) and Kalaudder (*Anomianthus dulcis*) diverges from the way other plants are used. The leaves of *C. odorata* are utilized through a process of maceration, whereby the leaves are manually compressed to form a paste. This paste is then applied directly to the injured part of the body. On the other hand, the leaves of *U. crinita* are pounded until they are sufficiently smooth and then applied to parts of the body of their livestock suffering from putrid wounds. The leaves of *A. dulcis* are used as a vermifuge for children, with the pounded - smooth leaves being applied to the stomach or back of the child afflicted with worms.
The utilization of medicinal plants within a particular region may differ from the utilization of medicinal plants by individuals inhabiting other regions. For instance, the Kedungpoh community employs *Strobilanthes crispa* (Tajibeling) as a remedial agent for renal calculi. Conversely, in other regions of West Java, *S. crispa*, locally referred to as Kejibeling, is utilized as an anti-inflammatory agent and a remedy for breast cancer (Tjitraresmi et al., 2023). Another example, the *Uraria crinita* (Patiset) is employed to treat festering wounds in the Melawi area of West Kalimantan, where it is referred to as Pondinasuk (Mariani et al., 2023). In addition, the people of Jugo village, Kediri, utilise plants such as *Tridax procumbens* (Songgolangit) (Ikewuchi et al., 2015) to lower blood sugar levels and the *Anredera cordifolia* plant (Binahong) to lower high blood pressure (Salim et al., 2021). In the Lawang Agung village, located in the Lahat Regency, *Polygala paniculata* (fragrant root) is utilized as a medicinal remedy for colds. This is achieved through a processing method involving pounding the root and subsequent application on the stomach. Moreover, the *Muehlenbeckia platyclada*, locally known as Kembangtulang, is utilized for the treatment of toothaches and warts through the application of its sap on the affected area; and *Jatropha multifida*, locally called Betadin, is used to heal wounds (Harmida et al., 2011).

3.2. Species Description

The following section prrsents detailed description of the medicinal plant species identified in Kedungpoh Village. This documentation aims to support the conservation and scientific utilization of ethnobotanical knowledge preserved by the local community.
1. *Chromolaena odorata* **(Figure 2a)**, a member of the Asteraceae family, is believed to have originated from the Americas and is now distributed in Africa, Oceania, and Asia (Adhikari et al., 2023). The most utilized part of the plant is the leaves because they contain allelochemicals derived from the flavonoid group, namely betulenol, sakuranetin, tamarixetin, isosakuranetin, kaempferide, odoratin, and other lacohol components, from the essential oil group, namely alkaloids, triterpenoids, monoterpene, and sesquiterpene hydrocarbons. Of these chemical compounds, *C. odorata* leaves have been found to contain the most flavonoid compounds, namely quercetin, padmatin, and sinensetin (Owolabi et al., 2010). The utilization of this plant has been a customary practice. A decoction of *C. odorata* leaves is used as a cough medicine, while a mixture of *C. odorata* leaves, lemongrass, and guava leaves is used as a malaria medicine. The pharmacological properties of these leaves extend to the treatment of burns, infections, inflammation, diuretic effects, hypertension, cancer, and various diseases caused by microbes or fungi (Shilpa et al., 2020).
2. *Stachytarpheta jamaicensis* **(Figure 2b)**, is a member of the Verbenaceae family that is native to the Americas, Africa, Asia, and Oceania. This plant is frequently referred to by a variety of names, including Gervao, Brazilian tea, rooter comb, blue porter weed, verbena cimarrona, Jolok Cacing, and Selasih Dandi. A comprehensive study of the secondary metabolites present in *S. jamaicensis* leaves reveals the presence of alkaloids, phlobotanins, flavonoids, tannins, terpenoids, saponins, phenols, glycosides, quinones, steroids, and coumarins. The plant is used in a number of ways, including as a wound healer, anti-inflammatory agent, antidiarrheal agent, antioxidant, and antimicrobial agent (Liew & Yong, 2016).
3. *Ardisia elliptica* **(Figure 2c)**, a member of the Primulaceae family, is indigenous to Asia, where it grows in an even pattern. *A. elliptica* leaf extract has been found to contain a high abundance of chemical compounds, including phenolic compounds (4-tert-butyl-2-[4-nitrophenyl] phenol and alpha-tocopherol), fatty acids (3,7,11,15-tetramethyl-2-hexadecen-1-ol), and terpenoids (longifolenaldehyde and lonasterol). The *A. elliptica* leaf is employed in the treatment of a wide range

of ailments, including herpes, diarrhea, scabies, fever, worms, cancer, salmonella, and a variety of bacterial infections (Al-Abd et al., 2017).

4. *Melastoma malabathricum* **(Figure 2d)**, is a member of the Melastomaraceae family, which is native to tropical and subtropical regions. The plant is referred to by various names including Kendudu, Senggani, Harendong, Yagomyum, and Putuki. *M. malabathricum* leaves have been found to contain tannins, flavonoids, sterols, polyphenols, lactones, and amides. The medicinal properties of *M. malabathricum* extend to the treatment of a wide range of ailments, including inflammation, diarrhea, dysentery, dental problems, fever, anemia, pain relief during childbirth, and epilepsy (Low et al., 2021).

5. *Andrographis paniculata* **(Figure 2e)**, is a member of the Acanthaceae family, which is distributed across Indonesia, Malaysia, India, Thailand, and China. *A. paniculata* possesses a high concentration of phytochemicals, including alkaloids, flavonoids, phenolics, steroids, tannins, coumarins, terpenoids, quinones, glycosides, saponins, and betasianin. This plant is used as an anti-inflammatory, antimicrobial, antiparasitic, anticancer, antioxidant, and wound medicine. In addition to its pharmaceutical applications, it has been employed as a remedy for the common cold, with studies suggesting its ability to alleviate symptoms such as fever and sore throat (Siriwa & Ferdinal, 2023).

6. *Tridax procumbens* **(Figure 2f)**, is a plant belonging to the Asteraceae family, which contains a variety of chemical compounds. A comprehensive analysis of the leaves of *T. procumbens* has revealed the presence of flavonoid compounds, including apigenin, quercetin, myricetin, luteolin, and myricetin, along with benzoic acid, carotenoids, tannins, violaxanthin, caffeine acid, galgravin, epiidesmin, emetine, ambelline, camptothecin, nitidine, lupanine, and choline. The function of these chemical compounds is as follows: they act as anticancer, antioxidant, anti-inflammatory, antiviral, antimicrobial, antidiabetic, antiallergic, and antioxidant agents (Ikewuchi et al., 2015).

7. *Litsea glutinosa* **(Figure 2g)**, a member of the Lauraceae family, is native to southern China, Malaysia, India and Australia. A range of secondary metabolite compounds have been identified in *L. glutinosa* leaves, including alkaloids, anthraquinone, flavonoids, volatile compounds, terpenoids, tannins, and glycosides. The therapeutic applications of this species include the treatment of wounds, infectious diseases, musculoskeletal conditions, and pain management (Lagudu & Owk, 2018).

8. *Panicum repens* **(Figure 2h)**, a member of the Poaceae family, has the capacity to thrive in nutrient-poor environments. However, the leaves of *P. repens* contain flavonoids, tannins, saponins, and alkaloids, while the stems contain flavonoids that are useful as natural pesticides and herbal medicine (Azizah et al., 2023).

9. *Cymbopogon nardus* **(Figure 2i)**,is an aromatic plant belongin to the family Poaceae that grows like reeds. This plant contains essential oil which is used as an itch, acne, and boil remedy. In addition, the content of phenol, geraniol, and citronellol in *C. nardus* can be used as antiproliferation against breast cancer cells, and ethanol in the stem can repel *Aedes aegypti* mosquitoes (Najmah et al., 2023). *Cymbopogon nardus* contains anti-inflammatory, antibacterial, and antifungal compounds (Imawati et al., 2023).

10. *Gliricidia sepium* **(Figure 2j)** belongs to the Leguminosae family and contains bioactive compounds, including phenols, tannins, steroids, steroids, flavonoids, and saponins. These bioactive compounds contribute to the antioxidant, anti-inflammatory, and wound-healing properties of *G. sepium* leaves, which have been traditionally employed in the treatment of various ailments, including wound medicine, itching, rheumatic disorders, and bone fractures. The flavonoids present in the leaves impart a bitter taste that deters insect consumption (Pratiwi & Muhsin, 2023).

11. *Elephantopus scaber* **(Figure 2k)** or Tapak Liman is a plant that contains flavonoid compounds, such as luteolin, quersetin, and rutin. These three compounds have the potential to reduce antihyperuricemia or uric acid disease (Gunarti & Hidayah, 2022). Tapak Liman leaves can be used as medicine for fever, mouth ulcers, cough, and contain antibacterial and antioxidant compounds (Florensia & Wijaya, 2023).

12. *Paederia foetida* **(Figure 2l)**, a member of the Rubiaceae family, is distributed in Asia. When subjected to mechanical stress, this plant emits a pronounced olfactory signal from its leaves and stems. *P. foetida* leaves have been found to contain glycosides, triterpenoids, phenolic compounds, anthraquinones, and essential oils. These have medicinal properties, including analgesic, appetite-enhancing, cough, phlegm, rheumatism, and anti-inflammatory effects. Furthermore, the leaves have

been found to possess wound-healing properties, thus serving as a potential natural remedy for various dermatological conditions (Dutta et al., 2023).

13. *Anomianthus dulcis* **(Figure 2m)** is a plant belonging to the Annonaceae family, which is native to the South Asian region. *A. dulcis* leaves contain a variety of chemical compounds, including alkaloids, terpenoids, phenolic compounds, and flavonoids. These chemical compounds have been shown to possess significant biological activities, including cytotoxic, anti-inflammatory, and antioxidant properties. In addition to its anti-cancer properties, *A. dulcis* has demonstrated efficacy against various types of cancer, including colon and lung cancer (Saengboonmee et al., 2024).

14. *Uraria crinita* **(Figure 2n)**, a member of the Leguminoceae family, has been utilized as a medicinal plant for various ailments, including wounds, diarrhea, rheumatism, and lung diseases. A comprehensive chemical analysis of *U. crinita* leaves has revealed the presence of several chemical compounds, including flavonoids, triterpenoids, megastigmanes, and phenolic compounds. These chemical compounds have been used in pharmacology as antioxidants, anti-inflammatory agents, and to maintain bone health (Dai et al., 2021).

15. *Muehlenbeckia platyclada* **(Figure 2o)**, a shrub plant from the New Guinea region, is a member of the Polygonaceae family with a variety of benefits. *M. platyclada*, commonly known as the "fracture plant", is a shrub that is rich in metabolite compounds, including phenolic compounds, triterpenoids, saponins, tannins and flavonoids. These compounds have been demonstrated to possess anticancer, antioxidant and analgesic properties, making it a valuable natural resource in pharmaceutical research (Munro et al., 2015).

16. *Anredera cordifol* **(Figure 2p)**, a plant native to South America that belongs to the Basellaceae family, is notable for its distinctive leaf morphology, which resembles a heart shape and is characterised by a vivid green hue. The indigenous name in Indonesia is Binahong. The leaves of *A. cordifol* have potential as a medicinal plant due to the content of stored metabolites, such as phenolics, terpenoids, saponins, flavonoids, and tannins. Secondary metabolites in *A. cordifol* leaves have been shown to possess a range of therapeutic properties, including the ability to heal burns, inhibit bacterial growth, reduce inflammation, treat diabetes, and reduce fever and high blood pressure. In addition, *A. cordifol* leaves have demonstrated the capacity to reduce the incidence of heart disease and to lower cholesterol levels (Salim et al., 2021).

17. *Centella asiatica* **(Figure 2q)**, a member of the Apiaceae family, has been shown to possess a number of medicinal properties. The leaves of *C. asiatica* have been employed in traditional medicine for a variety of ailments, including diarrhea, hypertension, and the prevention of pathogenic bacterial growth within the body. These benefits are attributable to the secondary metabolite compounds present in the plant, including alkaloids, flavonoids, steroids, phenolics, saponins, and triterpenoids. Flavonoid and phenolic compounds function as antioxidants, which are beneficial to the body. Furthermore, asiaticoside, asiatic acid, and madecassoside, which are present in the leaves, have been shown to be effective in the treatment of acne vulgaris (Saalino & Pagarra, 2023).

18. *Triphasia trofilia* **(Figure 2r)**, a plant belonging to the Rutaceae family, has been employed as a remedy for dandruff in hair, dysentery, diabetes, heart disease, influenza, and cough. The antibacterial properties of *T. trofilia* have been demonstrated in vitro against gram-positive bacteria, including *Staphylococcus aureus, Staphylococcus epidermidis*, and *Bacillus subtilis*, as well as gram-negative bacteria, such as *Escherichia coli*. The potential of *T. trofilia* to offer benefits to human health is attributable to the presence of chemical compounds within the plant, including tannins, triterpenoids, alkaloids, and flavonoids (Theanphong & Mingvanish, 2018).

19. *Kaempferia galanga* **(Figure 2s)**, a member of the Zingiberaceae family, has been utilized by the local populace as a medicinal agent for a variety of ailments, including diarrhea, fever, rheumatism, and cough. In Java, the rhizome is utilized for its flavor enhancement in culinary preparations, employed as a remedy for soreness, and incorporated into hair rinses. Additionally, *pilis*, a traditional practice, involves the placement of the rhizome on the forehead to alleviate heat. The therapeutic benefits of *K. galanga* are attributable to the presence of secondary metabolites, which function as protective agents against herbivores and have medicinal applications. These metabolites include alkaloids, terpenoids, and phenolics. The most prevalent terpenoid compounds are monoterpenes and sesquiterpenes (Muzzazinah et al., 2024).

20. *Sochus arvensis* **(Figure 2t)**, an Asteraceae member plant, has been utilized as a traditional medicine since ancient times, particularly in the domain of herbal medicine. Its applications extend

beyond the domain of herbal medicine, encompassing its use as a diuretic, a remedial agent for kidney stones, and a treatment for hypertension. The therapeutic benefits of *S. arvensis* are attributed to the flavonoid components it contains, including kaempferol, quercetin, and rutin. Furthermore, the plant contains high levels of antioxidants, which are sufficient to inhibit the presence of ROS (Reactive Oxygen Species) (Thasa, 2021).

21. *Dracaena angustifolia* **(Figure 2u)**, a plant of the Asparagaceae family, contains flavonoids, saponins, steroids, alkaloids and tannins. This plant is distributed across the Southeast Asian region, including Indonesia, and has been utilized as a component of traditional medicine, as well as in the production of natural food colouring, remedies for menstrual pain and dysentery, and antioxidants. The potential of these antioxidants to counteract free radicals in the body has been demonstrated to a significant degree, with the capacity to prevent respiratory disorders, heart disease, and cancer (Putriyana & Ridwanto, 2023).

22. *Zingiber officinale* **(Figure 2v)**, a member of the Zingiberaceae family, is indigenous to Asia, Australia and other regions. The plant has been utilized as a traditional medicine, with applications including the treatment of coughs, rheumatism, and dizziness. The ginger rhizome is also frequently employed as a warming beverage. The chemical composition of *Z. officinale*, including compounds such as gingerols, oleoresins, terpenes, and paradols, has been shown to possess significant biological activities, including anti-inflammatory, antioxidant, and anti-diabetic properties (Syafitri et al., 2018).

23. *Jatropha multifidi* **(Figure 2w)**, a member of the Euphorbiaceae family, contains secondary metabolites such as terpenes, alkaloids, flavonoids, phenols and heterosides. These compounds have been shown to possess a range of bioactivities, including antifungal, antibiotic, anticancer, anti-inflammatory, and antiviral properties. The sap of the *J. multifida* has been traditionally employed as a remedy for wounds and inflammation (Dah-Nouvlessounon et al., 2023).

24. *Pimpinella pruatjan* **(Figure 2x)**, an herbaceous plant in the Apiaceae family, is distinguished by its distinctive heart-shaped leaves that are green in color. It is notable for its tendency to form a rosette. It has been found to contain phenolic compounds, flavonoids, saponins, glucosides, and tannins, which have been demonstrated to possess significant biological activities, including the enhancement of stamina, the reduction of inflammation, and the ability to combat bacterial infections. In addition, *P. pruatjan* has been shown to reduce high blood pressure, improve blood circulation, and combat urinary tract infections (Batubara et al., 2023).

4. Conclusion

The knowledge of medicinal plants in Kedungpoh Village was identified and classified with a view to facilitating further management and utilization. A total of 24 plant species from 17 distinct families have been documented, with the Asteraceae family exhibiting the most prevalent distribution. The most widely used part of the medicinal plant is the leaf, with other plant parts such as roots, stems, sap, fruit and rhizomes also being used. The utilization of these medicinal plants has been found to be beneficial in the treatment of various human and animal diseases, in addition to the preparation of herbal medicinal remedies

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