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## INVENTORY OF TRADITIONAL MEDICINAL PLANTS IN KUBU RAYA REGENCY, INDONESIA

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### SUMMARY

Medicinal plants are traditional cures from generation to generation based on the local community elders' wisdom. The relevant study sought to classify medicinal plants in the Kubu Raya Regency, Indonesia. The qualitative research commenced on 34 species of plants, i.e., *Strobilanthes crispera* (L.) Blume., *Andrographis paniculata* (Burm. Fil) Nees, *Acorus* sp., *Aloe vera* (L.) Burm.f., *Gynura procumbens* (L.) Merr., *Elephantopus scaber* L., *Eclipta prostrata* L., *Euphorbia hirta* L., *Eleutherine bulbosa* (Mill.) Urb., *Premna serratifolia* L., *Melastoma malabathricum* L., *Melastoma sanguineum* Sims, *Psidium guajava* L., *Phyllanthus urinaria* L., *Piper betle* L., *Peperomia pellucida* (L.) Kunth, *Piper crocatum* Ruiz & Pav, *Serratia* sp., *Cymbopogon nardus* (L.) Rendle., *Ziziphus mauritiana* L., *Oldenlandia corymbosa* L., *Morinda citrifolia* L., *Myrmecodia pendens* Merr. & L.M.Perry, *Solanum* sp., *Physalis angulata* L., *Phaleria macrocarpa* (Scheff.) Boerl., *Zingiber purpureum* Roscoe, *Zingiber officinale* Roscoe., *Kaempferia galanga* L., *Curcuma zedoaria* (Christm.) Roscoe, *Zingiber zerumbet* (L.) Roscoe ex Sm., *Curcuma aeruginosa* Roxb, *Curcuma mangga* Valetton, and *Boesenbergia rotunda* (L.) Mansf. Boiled water from leaves is typically from medicinal plants, mostly belonging to the Zingiberaceae family.

**Keywords:** Medicinal plants, family Zingiberaceae, traditional medicines, local wisdom, leaf processing

**Key findings:** The presented research provides information about the different plant species used in traditional medicines. The results give insight into the importance of these medicinal plants and their beneficial use in curing various diseases to ensure good health.

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## INTRODUCTION

Indonesia is a recognizably rich area for plant biodiversity (Suryatinah *et al.*, 2020; Panjaitan *et al.*, 2021). Overall, Indonesia has around 28,000 species, with 1,000 known to have become ingredients in traditional medicines (Marpaung, 2018). The potential for medicinal plants, especially in West Kalimantan, is very diverse (Musaicho *et al.*, 2021; Maharani *et al.*, 2021). Past research showed that in various regions of West Kalimantan, most people used to grow these medicinal plants around their homes (Rahman *et al.*, 2019; Panjaitan *et al.*, 2020, 2021). Plant-derived products have an imperative biological role against certain pathogenic organisms, with most considered chief sources of modern drugs. The Kubu Raya District is one of 14 West Kalimantan districts still using several plants as traditional medicines (Panjaitan *et al.*, 2020).

Kubu Raya Regency is a part of the West Kalimantan Province. It has a rich diversity of biopharmaceutical plant ecosystems in an area of 8,492.1 km<sup>2</sup> (CSA, 2023). Such diversity has the potential to provide various types of plants that can benefit the community residing in the Kubu Padi Village and Kuala Mandor B District, Kubu Raya Regency, Indonesia. The area of Kubu Padi Village is about 61.45 km<sup>2</sup>, with a population of 6,089 people, consisting of Dayak, Madurese, Bugis, Chinese, and Malay ethnicities (Kubu Padi Village Archives, 2023). Based on the survey from interviews in 2023 with traditional healers in Kubu Padi Village, it was apparent that several types of diseases, including diarrhea, fever, malaria, diabetes, hepatitis, infected wounds, joint pain, and bleeding, are curable with traditional medicines using different plants. According to past studies, plant medicines have been traditionally passed down from generation to generation and are one of the local wisdom still surviving today (Panjaitan *et al.*, 2020; Maharani *et al.*, 2021).

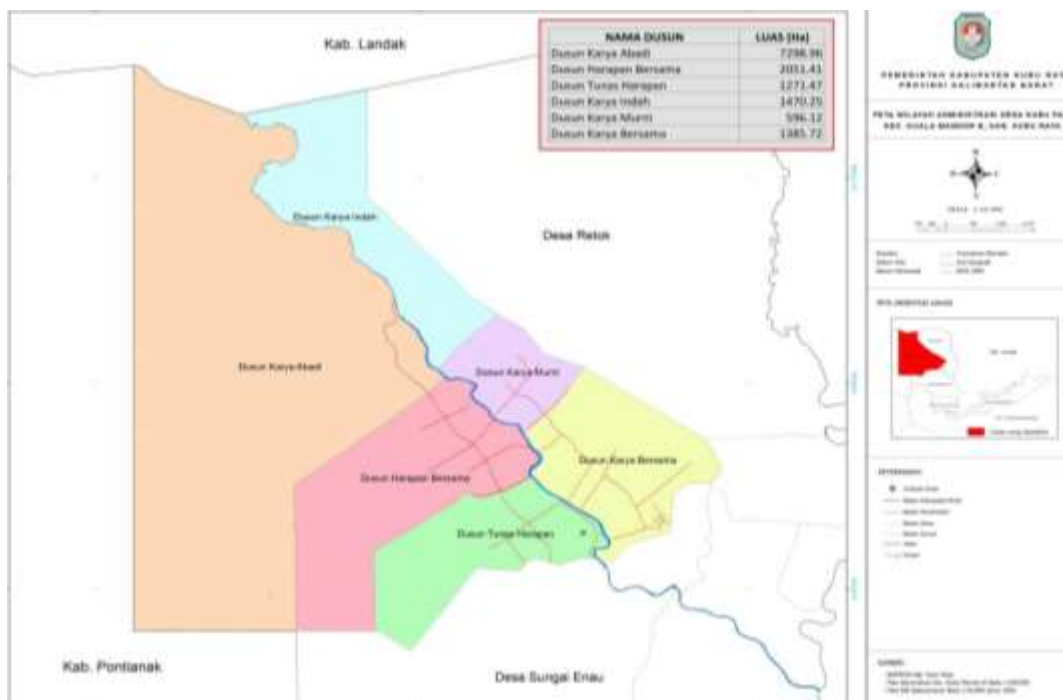
Plants used in traditional medicine are also the main choices because of uncomplicated processing, which can proceed at home without requiring special equipment (Rifandi *et al.*, 2020; Helmina and Hidayah, 2021; Panjaitan *et al.*, 2023) and cost less

(Apel *et al.*, 2023). Previous research using plants as traditional medicines revealed that the Beringin Village community, Sanggau Regency, uses 96 species of medicinal plants found in the Tembawang Forests (Rahman *et al.*, 2019). Apart from that, the people of Karya Usaha Hamlet (Kubu Raya, West Kalimantan, Indonesia) use seven species of plants to increase the appetite of toddlers (Panjaitan *et al.*, 2020), the people of Sebalo Village, Bengkayang Regency utilize 31 species of medicinal plants classified as 22 families (Musaicho *et al.*, 2021), and ethnic Chinese, Dayak, and Malay communities in West Kalimantan, Indonesia apply 23 species of plants that can treat jaundice (Panjaitan *et al.*, 2021).

Rural communities generally know about medicinal plant use; however, information on these has insufficient proper documentation (Wahyuningsih *et al.*, 2022). Knowledge transfer about medicinal plant utilization usually comes from elders verbally, causing the data to be lost (Helmina and Hidayah, 2021). In addition, research on the inventory of medicinal plants used by the community of Kubu Padi Village has never transpired. Therefore, it is necessary to conduct an inventory specifically regarding medicinal plants used by the Kubu Padi Village community, Kubu Raya Regency, Indonesia. Collecting the data on local wisdom by itemizing medicinal plant species and their application or benefits is the first step in preserving the local knowledge of the wider community (Suryatinah *et al.*, 2020; Rifandi *et al.*, 2020). Based on the above discussion, the innovative research aimed to carry out an inventory of the plants that have medicinal properties used by the Kubu Padi Village community, Kubu Raya Regency, Indonesia.

## MATERIALS AND METHODS

This research commenced in Kubu Padi Village, Kuala Mandor B sub-district, Kubu Raya Regency, Indonesia (Figure 1). The study used the qualitative method to determine the information about purposive samplings. The informants and data collectors were two



**Figure 1.** Kubu Padi Village Area Map (Kubu Padi Village Archives, 2023)

persons. The first phase of the research relied on the data collection conducted through interviews, observations, and documentation. In this research, interviews progressed with informants, namely, traditional healers in Kubu Padi Village, using a structured technique on an interview sheet that contained information about the benefits of plants, parts used, and processing methods (Tables 2a and b). After that, field observations and plant documentation continued using a camera.

Furthermore, the data presentation was narrative, accompanied by pictures and tables containing the interview results. The second phase was the collection of plant samples to serve in the herbarium. The sampling steps followed the modified Medicinal Plants and Herbal Medicine Research Team (2015), such as preparing tools and materials, making a concise list of the names and properties of plants mentioned by the informant, and documenting and collecting plant specimens described by them. The last phase of plant identification occurred at the Biology Laboratory, Faculty of Mathematics and Natural Sciences, Tanjungpura University,

Pontianak, Indonesia, with approval number 176/A/LB/FMIPA/UNTAN/2023.

## RESULTS AND DISCUSSION

Based on the results, 34 species of plants with medicinal properties existed in the area that the community in Kubu Padi Village used, and these species belonged to 17 families (Table 1, Figure 2). Mostly, these plants were prevalent in people's yards. The typical families were the Zingiberaceae, consisting of eight species; the Asteraceae, Piperaceae, and Rubiaceae families, comprising three species each; and the families Poaceae, Acanthaceae, Solanaceae, and Melastomataceae, with two species each. The families Phyllanthaceae, Thymelaeaceae, Asphodelaceae, Acoraceae, Myrtaceae, Euphorbiaceae, Lamiaceae, Rhamnaceae, and Iridaceae only have one species each.

The parts used by the people of Kubu Padi Village included leaves, roots, stems, fruits, tubers, and rhizomes in traditional healing processes. However, the most widely

**Table 1.** Local names, families, scientific names, parts, and properties of medicinal plants used by the community of Kubu Padi Village, Indonesia.

No	Local Name	Family	Scientific Name	Part used	Efficacy
1.	Keji beling	Acanthaceae	<i>Strobilanthes crispata</i> (L.) Blume.	Leaves	Treating diabetes
2.	Sambiloto	Acanthaceae	<i>Andrographis paniculata</i> (Burm. Fil) Nees	Leaves	Treating diabetes
3.	Jeringau	Acoraceae	<i>Acorus</i> sp.	Rhizomes	Relieves internal heat
4.	Lidah buaya	Asphodelaceae	<i>Aloe vera</i> (L.) Burm.f.	Gel within leaves	Relieves internal heat
5.	Sambung nyawe	Asteraceae	<i>Gynura procumbens</i> (L.) Merr.	Leaves	Treating cholesterol disease
6.	Tapak liman	Asteraceae	<i>Elephantopus scaber</i> L.	Leaves	Treating diabetes
7.	Urang aring	Asteraceae	<i>Eclipta prostrata</i> L.	Leaves	Fertilizes hair
8.	Gendong anak	Euphorbiaceae	<i>Euphorbia hirta</i> L.	Leaves and roots	Treating diabetes and hepatitis
9.	Bawang dayak/mekah	Iridaceae	<i>Eleutherine bulbosa</i> (Mill.) Urb.	Bulbs	Treating malaria and typhus
10.	Buas buas	Lamiaceae	<i>Premna serratifolia</i> L.	Leaves	Eliminates body odor and treats constipation
11.	Cengkodok	Melastomataceae	<i>Melastoma malabathricum</i> L.	Leaves	Stop bleeding and natural antibacterial
12.	Cengkodok bulu	Melastomataceae	<i>Melastoma sanguineum</i> Sims	Leaves	Natural antibacterial
13.	Jambu biji	Myrtaceae	<i>Psidium guajava</i> L.	Leaves	Treating diarrhea
14.	Meniran	Phyllanthaceae	<i>Phyllanthus urinaria</i> L.	Roots	Treating diabetes and kidney stones
15.	Sirih hijau	Piperaceae	<i>Piper betle</i> L.	Leaves	Eliminates vaginal discharge in the feminine area
16.	Sirih cine	Piperaceae	<i>Peperomia pellucida</i> (L.) Kunth	Leaves	Treats diarrhea, skin inflammation, and intestinal infections
17.	Sirih merah	Piperaceae	<i>Piper crocatum</i> Ruiz & Pav	Leaves	Treating diabetes
18.	Papulut	Poaceae	<i>Serratia</i> sp.	Roots	Treating hepatitis A-D
19.	Serai	Poaceae	<i>Cymbopogon nardus</i> (L.) Rendle.	Stem	Lowers blood pressure
20.	Bidara	Rhamnaceae	<i>Ziziphus mauritiana</i> L.	Leaves and bark	Treating gastric diseases and joint pain
21.	Gane	Rubiaceae	<i>Oldenlandia corymbosa</i> L.	All parts	Treating skin infections
22.	Mengkudu	Rubiaceae	<i>Morinda citrifolia</i> L.	Fruit	Treating high blood pressure
23.	Sarang semut	Rubiaceae	<i>Myrmecodia pendens</i> Merr. & L.M.Perry	All parts	Treating tumors
24.	Kamuje	Solanaceae	<i>Solanum</i> sp.	Leaves	Improves blood circulation, restores nerves, and treats hepatitis
25.	Ciplukan	Solanaceae	<i>Physalis angulata</i> L.	All parts	Treating tuberculosis
26.	Mahkota dewa	Thymelaeaceae	<i>Phaleria macrocarpa</i> (Scheff.) Boerl.	Fruit	Treating cancer and diabetes
27.	Banglai	Zingiberaceae	<i>Zingiber purpureum</i> Roscoe	Rhizomes	Relieves fever and headaches
28.	Jahe merah	Zingiberaceae	<i>Zingiber officinale</i> Roscoe	Rhizomes	Relieves menstrual pain
29.	Kencur	Zingiberaceae	<i>Kaempferia galanga</i> L.	Rhizomes	Treating biri-biri
30.	Kunyit putih	Zingiberaceae	<i>Curcuma zedoaria</i> (Christm.) Roscoe	Rhizomes	Lowers blood pressure and relieves menstrual pain
31.	Lempuyang	Zingiberaceae	<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm.	Rhizomes	Treats fever and increases appetite
32.	Temu ireng	Zingiberaceae	<i>Curcuma aeruginosa</i> Roxb	Rhizomes	Relieves fever and stomach ache
33.	Temu paluh	Zingiberaceae	<i>Curcuma mangga</i> Valetton	Rhizomes	Warms the body
34.	Temu kunci	Zingiberaceae	<i>Boesenbergia rotunda</i> (L.) Mansf.	Rhizomes	Treating dry cough

**Table 2a.** Methods for processing medicinal plants.

No.	Local & scientific name	Processing method
1.	Keji beling ( <i>Strobilanthes crispa</i> (L.) Blume.)	Washing the keji beling leaves clean. The leaves are boiled with a mixture of several other types of plants. Then, drink boiled water directly.
2.	Sambiloto ( <i>Andrographis paniculata</i> (Burm. Fil) Nees)	The sambiloto leaves washed clean and then boiled with a mixture of several other types of plants. Drink boiled water directly.
3.	Jeringau ( <i>Acorus</i> sp.)	Jeringau rhizomes, washed clean, cut into small pieces, then mashed and boiled. Afterward, filter the water and drink it.
4.	Lidah buaya ( <i>Aloe vera</i> (L.) Burm.f.)	The lidah buaya leaves, peeled with the inner part (gel) taken out, then thinly sliced and cleaned before boiling. Then, consume the boiled gel immediately.
5.	Sambung nyawe ( <i>Gynura procumbens</i> (L.) Merr.)	The sambung nyawe leaves, washed clean and then bring to boil. Cooled boiled water can be drunk directly.
6.	Tapak liman ( <i>Elephantopus scaber</i> L.)	Tapak liman leaves, washed clean and then boiled with a mixture of several other species of plants. Drink directly the cooled boiled water.
7.	Urang aring ( <i>Eclipta prostrata</i> L.)	Urang aring leaves, washed clean, then crushed and mixed with a little water. After that, apply it to the head.
8.	Gendong anak ( <i>Euphorbia hirta</i> L.)	The leaves and roots of akar gendong anak, washed clean, then cut into small pieces and dried. After that, boil in water and then drink the boiled water immediately when cooler.
9.	Bawang dayak/mekah ( <i>Eleutherine bulbosa</i> (Mill.) Urb.)	Bawang dayak/mekah bulbs, washed clean, then sliced thinly then boiled. Cooled boiled water can be drunk directly.
10.	Buas buas ( <i>Premna serratifolia</i> L.)	The leaves of the buas buas, washed clean and dried. Buas buas leaves can be eaten directly or cooked as a vegetable.
11.	Cengkodok ( <i>Melastoma malabathricum</i> L.)	Cengkodok leaves, washed clean and then pounded until smooth. After that, crushed leaves are applied to the wound.
12.	Cengkodok bulu ( <i>Melastoma sanguineum</i> Sims)	Cengkodok bulu leaves, washed clean and then pounded until smooth. After that, crushed leaves are rubbed on the body.
13.	Jambu biji ( <i>Psidium guajava</i> L.)	Jambu biji leaves, washed clean, then the leaves are boiled, with the cooled boiled water drunk directly or leaves eaten directly.
14.	Meniran ( <i>Phyllanthus urinaria</i> L.)	The meniran roots, washed clean, and then the roots are boiled with a mixture of several other types of plants. Cooled boiled water can be drunk directly.
15.	Sirih hijau ( <i>Piper betle</i> L.)	Sirih hijau leaves, washed clean, and then the leaves are boiled in water. Once cold, use the water to rinse the feminine area.
16.	Sirih cine ( <i>Peperomia pellucida</i> (L.) Kunth)	Sirih cine leaves, washed clean, and then the leaves boiled in water. Cooled boiled water can be drunk directly.
17.	Sirih merah ( <i>Piper crocatum</i> Ruiz & Pav)	Sirih merah leaves, washed clean, and then the leaves boiled in water. Cooled boiled water can be drunk directly.

**Table 2b.** Methods for processing medicinal plants.

No.	Local & scientific name	Processing method
18.	Papulut ( <i>Serratia</i> sp.)	The papulut roots, washed clean, then cut into small pieces and dried. After that, the roots boiled in water can be drunk directly when cool or warm.
19.	Serai ( <i>Cymbopogon nardus</i> (L.) Rendle.)	The serai stalks, washed clean, cut into small pieces, and then boiled. Cooled boiled water can be drunk twice a day.
20.	Bidara ( <i>Ziziphus mauritiana</i> L.)	The leaves and bark of the bidara stem are washed clean, then the bark is cut into small pieces and dried. After that, the leaves and bark boiled in water can be drunk directly when cool.
21.	Gane ( <i>Oldenlandia corymbosa</i> L.)	All parts of the gane plant, washed thoroughly, then mashed and mixed with a little water. After that, apply it to the infected area.
22.	Mengkudu ( <i>Morinda citrifolia</i> L.)	The mengkudu fruit, washed clean, then the skin is peeled and mashed. After that, the filtered water can be drunk straight away.
23.	Sarang semut ( <i>Myrmecodia pendens</i> Merr. & L.M.Perry)	All parts of the sarang semut, washed clean, cut into small pieces and dried, then boiled in water. Cooled boiled water can be drunk directly.
24.	Kamuje ( <i>Solanum</i> sp.)	Kamuje leaves, washed clean and dried, then the leaves are boiled and the cooled boiled water can be drunk directly.
25.	Ciplukan ( <i>Physalis angulata</i> L.)	All parts of the ciplukan, washed clean and then boiled in water. Cooled boiled water can be drunk directly.
26.	Mahkota dewa ( <i>Phaleria macrocarpa</i> (Scheff.) Boerl.)	Mahkota dewa fruit, washed clean, then cut into small pieces and dried. After that, boil in water and the cooled boiled water can be drunk directly.
27.	Banglai ( <i>Zingiber purpureum</i> Roscoe)	Banglai rhizomes, washed clean, cut into small pieces, then mashed and boiled. After that, the water is filtered and can be drunk straight away.
28.	Jahe merah ( <i>Zingiber officinale</i> Roscoe)	Jahe merah rhizomes, washed clean, cut into small pieces, then mashed and boiled. After that, the water is filtered and can be drunk directly.
29.	Kencur ( <i>Kaempferia galanga</i> L.)	Kencur rhizomes, washed clean, cut into small pieces, then mashed and boiled. After that, the filtered water can be drunk straight away.
30.	Kunyit putih ( <i>Curcuma zedoaria</i> (Christm.) Roscoe)	Kunyit putih rhizomes, washed clean, cut into small pieces, then mashed and boiled. After that, filter the water and can drink it straight away.
31.	Lempuyang ( <i>Zingiber zerumbet</i> (L.) Roscoe ex Sm.)	The lempuyang rhizomes, washed thoroughly, cut into small pieces, then mashed and boiled. After that, filter the water and you can drink it straight away.
32.	Temu ireng ( <i>Curcuma aeruginosa</i> Roxb)	The rhizome of temu ireng, washed clean, cut into small pieces, then mashed and boiled. After that, filter the water and you can drink it straight away.
33.	Temu paluh ( <i>Curcuma mangga</i> Valeton)	The rhizome of temu paluh, washed clean, cut into small pieces, then mashed and boiled. After that, filter the water and you can drink it straight away.
34.	Temu kunci ( <i>Boesenbergia rotunda</i> (L.) Mansf.)	The rhizome of temu kunci, washed clean, cut into small pieces, then mashed and boiled. After that, filter the water and you can drink it straight away.



**Figure 2.** Various species of medicinal plants used by the people of Kubu Padi Village: Keji beling (*Strobilanthes crispa* (L.) Blume.), Sambiloto (*Andrographis paniculata* (Burm. Fil) Nees), Jeringau (*Acorus* sp.), Lidah buaya (*Aloe vera* (L.) Burm.f.), Sambung nyawe (*Gynura procumbens* (L.) Merr.), Tapak liman (*Elephantopus scaber* L.), Urang aring (*Eclipta prostrata* L.), Gendong anak (*Euphorbia hirta* L.), Bawang dayak/mekah (*Eleutherine bulbosa* (Mill.) Urb.), Buas buas (*Premna serratifolia* L.), Cengkodok (*Melastoma malabathricum* L.), Cengkodok bulu (*Melastoma sanguineum* Sims), Jambu biji (*Psidium guajava* L.), Meniran (*Phyllanthus urinaria* L.), Sirih hijau (*Piper betle* L.), Sirih cine (*Peperomia pellucida* (L.) Kunth), Sirih merah (*Piper crocatum* Ruiz & Pav), Papulut (*Serratia* sp.), Serai (*Cymbopogon nardus* (L.) Rendle.), Bidara (*Ziziphus mauritiana* L.), Gane (*Oldenlandia corymbosa* L.), Mengkudu (*Morinda citrifolia* L.), Sarang semut (*Myrmecodia pendens* Merr. & L.M.Perry), Kamuje (*Solanum* sp.), Ciplukan (*Physalis angulata* L.), Mahkota dewa (*Phaleria macrocarpa* (Scheff.) Boerl.), Banglai (*Zingiber purpureum* Roscoe), Jahe merah (*Zingiber officinale* Roscoe), Kencur (*Kaempferia galanga* L.), Kunyit putih (*Curcuma zedoaria* (Christm.) Roscoe), Lempuyang (*Zingiber zerumbet* (L.) Roscoe ex Sm.), Temu ireng (*Curcuma aeruginosa* Roxb), Temu paluh (*Curcuma mangga* Valetton), Temu kunci (*Boesenbergia rotunda* (L.) Mansf.).

used plant part is the leaves. Previous research established that leaves are easier to find and collect and do not cause significant damage to medicinal plants (Maharani *et al.*, 2021; Al-Nerma and Abdullah, 2023; and Khedr *et al.*, 2024). Apart from that, leaves also contain various bioactive compounds (Suryatinah *et al.*, 2020) and secondary metabolite compounds, which are vital in biological activities (Mariani *et al.*, 2020).

Based on the results from informant interviews, the study found that processing and using medicinal plants transpire in several ways, namely, boiling then drinking, mashing then rubbing or smearing, and boiling then directly eating (Tables 2a and b). The most widely applied method of managing and dispensing medicinal plants by the Kubu Padi Village people is boiling them and then drinking the broth. Based on previous research, a dominant belief in using traditional medicinal herbs by boiling and drinking hastens the drug reaction compared with other methods used locally (Maharani *et al.*, 2021; Pirmansyah *et al.*, 2023).

Plants used for medicinal purposes have various phytochemicals that are also beneficial for other treatments in the Kubu Raya Regency. Previous research reported that 'keji beling' (*Strobilanthes crispera* L. Blume.) leaves could help treat diabetes, have the potential as an antioxidant, anticancer, and treatment of kidney stones because of its activity as a potent diuretic, and this plant contains alkaloids, anthraquinones, flavonoids, and tannins (Rahman *et al.*, 2019).

'Sambiloto' (*Andrographis paniculata* (Burm. Fil) Nees) leaves are favorable for treating diabetes (Martiningsih *et al.*, 2018), and the said plant contains flavonoids, tannins, and diterpenoids. Besides, reports state the plant also has anti-inflammatory, anti-diarrheal, antibacterial potential for treating hepatitis, malaria, and reducing fever (Anam *et al.*, 2022). 'Jeringau' (*Acorus* sp.) has rhizomes that effectively relieve heartburn. This plant also contains alkaloid compounds, essential oils, tannins, flavonoids, and saponins, with the potential to be anti-inflammatory, antipyretic, and antibacterial, treating fever and shortness of breath (Hardiansi *et al.*, 2020).

'Lidah buaya' (*Aloe vera* L. Burm.f.) can relieve heartburn. The said plant also contains saponins, flavonoids, polyphenols, and tannins, which have antiseptic properties and are antimicrobial and antifungal, treating burns (Musaicho *et al.*, 2021). 'Sambung nyawa' (*Gynura procumbens* L. Merr.) leaves are beneficial for treating cholesterol disease (Suryandari *et al.*, 2020). This plant appeared to contain alkaloid compounds, flavonoids, tannins, saponins, and steroids, with the potential as antihypertensive, anticancer, anti-inflammatory, antibacterial, antihyperglycemic, treats cancer, heart diseases, cholesterol, and malaria (Ranti *et al.*, 2023).

Reports revealed 'Tapak liman' (*Elephantopus scaber* L.) contains steroid compounds, alkaloids, flavonoids, epifriedelanol, lupeol, and asterol (Musaicho *et al.*, 2021), and its leaves could mainly treat diabetes (Anam *et al.*, 2022). Aside from that, this plant showed treating dysentery, chicken pox, menstrual pain, sore throat, anemia, vaginal discharge, coughs, and inflammation of the kidneys (Musaicho *et al.*, 2021). 'Urang aring' (*Eclipta prostrata* L.) has the property of fertilizing hair, with reports containing flavonoids, alkaloids, saponins, tannins, sterols, and terpenoids. This plant has potential as an anti-insect and antibacterial agent (Helmina and Hidayah, 2021).

'Gendong anak' (*Euphorbia hirta* L.) leaves and roots are highly effective for treating diabetes and hepatitis. Accounts also said the plant contains secondary metabolite compounds, including steroids, phenolics, flavonoids, tannins, and alkaloids, with properties for treating asthma, dysentery, inflammation of the mammary glands, typhoid, and hypertension (Musaicho *et al.*, 2021). 'Bawang mekah' (*Eleutherine bulbosa* (Mill.) Urb.), also called 'bawang dayak,' has the properties for treating malaria and typhus. This plant contains phenolic compounds, flavonoids, alkaloids, steroids, monoterpenoids, sesquiterpenoids, quinones, and tannins. Bawang mekah is also effective in treating skin diseases caused by *Staphylococcus aureus* and



*Trichophyton rubrum*, with the potential as an anti-cholesterol agent (Kumalasari *et al.*, 2018).

'Buas buas' (*Premna serratifolia* L.) efficiently eliminates body odor and treats constipation. Savage wild leaves reportedly contain secondary metabolite compounds, flavonoids, saponins, tannins, and triterpenoids. This plant has the potential as an antioxidant, anti-inflammatory, and anti-tumor, treating cancer, heart disease, cough, asthma, bronchitis, and flatulence (Puspita *et al.*, 2020). 'Cengkodok' (*Melastoma malabatricum* L.) successfully treats bleeding and is a natural antibacterial. Reports said the plant contains flavonoids, phenols, saponins, tannins, terpenoids, and polyphenols in sufficient quantity; it has the potential to serve as an antimicrobial and antibacterial in treating burns, diarrhea, and diabetes (Sari *et al.*, 2022).

'Cengkodok bulu' (*Melastoma sanguineum* Sims) is valuable as a natural antibacterial. The leaves of cengkodok bulu contain flavonoids, steroids, tannins, and saponins and reportedly have the potential to reduce fever (antipyretic), relieve pain (analgesic), improve blood flow, and stop bleeding (Apel *et al.*, 2023). 'Jambu biji' (*Psidium guajava* L.) is best for treating diarrhea. The said plant also contains flavonoid compounds, saponins, tannins, essential oils, fatty oils, malic acid, and it serves well as an antibacterial, antifungal for treating diarrhea, bloating, and healing of skin infections (Apel *et al.*, 2023).

'Meniran' (*Phyllanthus urinaria* L.) plant contains flavonoids, alkaloids, tannins, secondary metabolism, and lignin compounds (phyllantin, niranthin, phyltetralin, hypophyllanthin, nirtetralin, and lintretalin), and superior in treating diabetes and kidney stones (Rifandi *et al.*, 2020). In addition, the said plant may have the potential as an antioxidant, antibacterial, and to treat gout. 'Sirih hijau' (*Piper betle* L.) leaves are more effective in eliminating vaginal discharge in the feminine area (Rifandi *et al.*, 2020). A report said the plant contains saponins, flavonoids, polyphenols, and essential oils, with properties for treating nosebleeds, aches and pains,

canker sores, and bad breath (Maharani *et al.*, 2021).

'Sirih cine' (*Peperomia pellucida* L. Kunth) leaves are beneficial in treating diarrhea, skin inflammation, and intestinal infections (Maharani *et al.*, 2021). This plant also contains anthraquinones, tannins, flavonoids, alkaloids, and glycosides. Moreover, this plant can be an antioxidant, treating acne, boils, and stomach aches. 'Sirih Merah' (*Piper crocatum* Ruiz & Pav) leaves help treat diabetes and contain phytochemical compounds, namely, essential oils, alkaloids, saponins, tannins, and flavonoids (Maharani *et al.*, 2021). In addition, the said plant could effectively treat diabetes, gout, breast cancer, nosebleeds, stomachache, and itching.

'Papulut' (*Serratia* sp.) is among endemic plants, functioning as a traditional medicine in treating hepatitis A-D. The Serai (*Cymbopogon nardus* (L.) Rendle.) plant contains alkaloids, terpenoids, and phenolic compounds and is most effective for lowering blood pressure. Reports stated this plant is efficacious in treating fever, stomachache, toothache, and diabetes (Pirmansyah *et al.*, 2023). 'Bidara' (*Ziziphus mauritiana* L.) plant leaves and stem bark can help treat stomach ailments and joint pain. The said plant also contains alkaloids, phenols, flavonoids, saponins, quercetin, and terpenoids, and this plant has antimicrobial, anticancer, antidiabetic, and anti-inflammatory properties (Siregar, 2020).

'Gane' (*Oldenlandia corymbosa* L.) appeared favorable in treating skin infections and contains flavonoids, phenolic compounds, phenolic acids, tannins, and phenolic diterpenoids. Likewise, research said this plant has the potential to be an antioxidant to treat cancer (Rahman *et al.*, 2019). 'Mengkudu' (*Morinda citrifolia* L.) can treat high blood pressure, with contents of anthraquinone, alkaloid, thiamin, and glycoside compounds. In addition, the said plant has the properties for treating headaches and ulcers and eliminating vaginal discharge, potentially as an antioxidant and antibacterial (Rifandi *et al.*, 2020).

'Sarang semut' (*Myrmecodia pendens* Merr. & L.M.Perry) has properties for treating tumors, with the said plant reported to contain

tocopherol, flavonoid, and phenolic compounds (Rahman *et al.*, 2019). Similarly, this plant could have the potential to be an antioxidant and anticancer, treating stomach ulcers and improving blood circulation (Maharani *et al.*, 2021). 'Kamuje' (*Solanum* sp.) is an endemic plant that can serve as traditional medicine, improving blood circulation, restoring nerves, and treating hepatitis.

'Ciplukan' (*Physalis angulata* L.) has the properties for treating tuberculosis, as the said plant stem extract contains alkaloids, phenolics, flavonoids, terpenoids, and saponins. Also, its fruit contains alkaloids, phenolics, flavonoids, and saponins, with the leaves containing flavonoid compounds. This plant can also serve as an anti-diarrhea, anti-hypercholesterolemia, anti-inflammatory agent, treating malaria and inflammation (Panjaitan *et al.*, 2023).

'Mahkota dewa' (*Phaleria macrocarpa* (Scheff.) Boerl.) fruits can be beneficial for treating cancer and diabetes. Mahkota dewa seeds contain alkaloids, saponins, polyphenols, flavonoid resins, tannins, phenols, essential oils, sterols, and its fruit seeds serve as a bioinsecticide, antitumor, antioxidant, treating cancer, diabetes mellitus, and hypertension (Hardiyanti *et al.*, 2020). 'Banglai' (*Zingiber purpureum* Roscoe) rhizomes help relieve fever and headaches (Helmina and Hidayah, 2021). The said plant also contains flavonoids, alkaloids, saponins, phenolics, phenylethanoid, dimethoxyphenyl butadiene, essential oils, and curcumin, making it treat diarrhea, rheumatoid fever, malaria, and asthma and as an antioxidant (Maharani *et al.*, 2021).

'Jahe merah' (*Zingiber officinale* Roscoe.) rhizomes are more effective in relieving menstrual pain caused by uterine contractions during the menstrual period. Reports said the plant can contain alkaloids, phenolics, steroids, saponins, and glycosides (Phong *et al.*, 2022). Rhizomes of jahe merah could also eliminate body odor, treat jaundice and ulcers, increase appetite, maintain endurance, relieve itching, treat flatulence and toothache, and are anti-inflammatory and antioxidant (Panjaitan *et al.*, 2020).

'Kencur' (*Kaempferia galanga* L.) rhizomes are most effective in treating sheep

disease caused by vitamin deficiencies, with the said plant reported to contain alkaloids, flavonoids, saponins, and glycosides. Furthermore, this plant can treat coughs, colds, inflammation, diarrhea and can be anti-microbial, antioxidant, and wound healing (Panjaitan *et al.*, 2020). 'Kunyit putih' (*Curcuma zedoaria* (Christm.) Roscoe) rhizomes could help lower blood pressure and relieve menstrual pain, and the said plant also contains flavonoids, steroids, tannins, and saponins (Phong *et al.*, 2022). The said plant proved effective in treating fever and coughing up blood, as well as an antidiabetic and antibacterial (Rahman *et al.*, 2019).

'Lempuyang' (*Zingiber zerumbet* (L.) Roscoe ex Sm.) rhizomes effectively treat fever and increase appetite. Also, lempuyang rhizome extract contains secondary metabolites, such as alkaloids, flavonoids, saponins, steroids, triterpenoids, phenolics, and tannins. The said plant was beneficial as an anti-inflammatory and anti-hyperglycemic agent and a medicine for stomachaches, asthma, dysentery, worms, diarrhea, and diabetes (Musaicho *et al.*, 2021). 'Temu ireng' (*Curcuma aeruginosa* Roxb), commonly called 'temu hitam,' has rhizomes relieving fever and stomachaches and contains saponins, flavonoids, tannins, blue pigments, and alkaloids. Reports on this plant stated its effectiveness in increasing appetite, treating malaria, hepatitis, flatulence, worms, coughs, and being helpful as an antibacterial (Musaicho *et al.*, 2021).

'Temu paluh' (*Curcuma mango* Valeton) rhizomes emerged as most effective for warming the body also contain secondary metabolites, including flavonoids, curcumin, saponins, essential oils, terpenoids, and polyphenols (Susiloningrum and Sari, 2021). Likewise, this plant may have anti-dyslipidemic potential and lower cholesterol levels (Galicia-Garcia *et al.*, 2020). 'Temu kunci' (*Boesenbergia rotunda* (L.) Mansf.) rhizomes have the properties to treat dry coughs, and this plant also contains several bioactive compounds previously identified from

the ginger rhizome extract, including flavonoids, alkaloids, phenolics, and saponins (Panjaitan et al., 2020). Besides, this plant has evidence to be an antimicrobial, antifungal, antibacterial, antioxidant, and treating obesity (Handayani et al., 2018).

## CONCLUSIONS

The community of the Kubu Padi Village, Kubu Raya Regency, Indonesia, utilizes 34 species belonging to 17 families of plants for medicinal purposes, and most of them belong to the family Zingiberaceae. The most used parts of the plant included leaves, rhizomes, roots, tubers, stems, and fruits. Therefore, utilizing medicinal plants for treating different diseases needs preservation as the community-owned local wisdom.

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