BIOLOGY, MEDICINE, & NATURAL PRODUCT CHEMISTRY ISSN 2089-6514 (paper)
Volume 13, Number 1, April 2024 | Pages: 73-82 | DOI: 10.14421/biomedich.2024.131.73-82 ISSN 2540-9328 (online)

Ethnobotanical Study of Medicinal Plants in South Sumatera, Indonesia

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Manuscript received: 13 January, 2024. Revision accepted: 08 May, 2024. Published: 15 May, 2024.

Abstract

South Sumatra, a province in Indonesia, is inhabited by several tribes. The geographical landscape surrounded by primary and secondary forests is a natural resource for the local communities in dealing with medical problems. They use plants as traditional medicine from generation to generation. The used parts include roots, stems, leaves, and sap that are biologically active to treat some diseases from moderate to deadly diseases. Based on literature studies, there are 250 plant species from 79 families processed by local communities in South Sumatra in some ethnobotanical activities. The dominant plant families are Fabaceae (5.6%), Asteraceae (4.8%), Euphorbiaceae (4.4%), Poaceae (4.4%), Myrtaceae (3.6%), Rubiaceae (3.6%), Rutaceae (3.6%), Solanaceae (3.6%), and Piperaceae (3.2%). Among many methods, boiling is the most common method in processing medicinal plants as it is considered more effective in extracting the bioactive compounds.

Keywords: biodiversity; compound; medicine; ethnobotany; traditional.

INTRODUCTION

Historically, humans have adapted to nature to continue their life including the use of traditional medicine in preventing diseases that passed down from generation to generation. Some local people use traditional medicine for several reasons, belief and suggestion, fast healing rates, cheap treatment costs, and fear of medical treatment (Amisim et al., 2020). Fokunang et al. (2011) explained that traditional medicine refers to practical, material approaches, insights, and beliefs. Also, treatment involving plants, animals, minerals, and spiritual therapy. According to Yuan et al. (2016), traditional medicine has its uniqueness related to its diverse and distinctive chemical structure and biological activity. For example, Taxol, a compound isolated from *T. brevifolia* used as an anticancer drug. The most traditional medicines from several countries have contributed to the development of modern medicine like hawthorn and foxglove applied for the treatment of hypertension and cardiovascular disorders (WHO, 2023).

Indonesia is known as a mega biodiversity spot after Brazil. In 2017, as many as 31,750 species consisting of 2,273 types of fungi, 2,722 types of mosses, 512 types of lichens, 1,611 types of pteridophytes, and 24,632 types of spermatophytes had been identified by National Research and Innovation Agency, and this number will continue to increase along with the number of angiosperm exploration (Retnowati et al., 2019). In Indonesia, Java is the place where most groups of fungi, moss, lichens, and spermatophytes dominate, while Sumatra is the island where the distribution of pteridophytes dominates. From the abundance of plants, every part such as roots, stems, leaves and sap has been used for medicinal purposes.

South Sumatra, 91,592 km^2, is inhabited by many tribes, such as the Komering, Palembang, Gumai, Semendo, Lintang, Kayu Agung, Lematang, Ogan, Besemah, Sekayu, and other tribes. Each tribe has its unique method of processing plants to produce traditional medicine. The people of Segara Kembang Village in Ogan Komering Ulu Regency (OKU) use cassava juice (tubers) as a treatment for typhus, bamboo roots as a fever reducer, Brotowali leaves as a medicine for rheumatism, malaria, and fever (Sitorus et al., 2011). The miracle leaf (*Bryophyllum calycinum*) is used as a compress for abscesses and to shrink hemorrhoids by the OKU community (Retnaningsih, 2012). The research was also carried out in Lawang Agung Village, Mulak District, Lahat Regency, which classified 41 types of medicinal plants and of this number, there were 9 types of ethnic plants for fever medicine, feminine hygiene, wart medicine, and wound medicine, namely *Anthocephalus cadamba* M1., *Gelosia argentea* L., *Eupatorium inofolium* H.B.K., *Leea indica Merr*., *Morus multicaulis* Loud., *Peronema canescens* Jack., *Schima wallichii* (DC) Korth., and *Stachitarpeta jamaicensis* (L.) Vahl (Harmida et al., 2011). The large number of tribes

and the abundance of plants, especially ethnic plants, need to be studied more deeply in terms of their medicinal uses in encouraging and assisting modern medicine. Thus, this article will emphasize the potential of plants in traditional medicine, especially treatment carried out by the people of South Sumatra, which can be a reference for the development of medicine and biological conservation.

METHODS

The research method focuses on the research process of collecting information and data through several methods such as observation and reviewing literature. Through a qualitative approach, researchers will review secondary data literature and draw conclusions. Secondary data will be analyzed descriptively. This data analysis will include data reduction, data presentation and discussion, and conclusions. Data reduction is part of extracting main information from the data so that it can be concluded more clearly. In this research, qualitative research methods were used to collect information regarding the essence of plants used as traditional medicine by the people of South Sumatra.

RESULTS AND DISCUSSION

Based on our review, 79 plant families, as listed in Table 1., are used in ethnobotanical activities in some tribes in South Sumatra Indonesia for some purposes such as traditional medicines. Of these 79 families, there are 250 species of medicinal plants. The dominant plant families are Fabaceae (5.6%), Lamiaceae (5.2%), Asteraceae (4.8%), Euphorbiaceae (4.4%), Poaceae (4.4%), Myrtaceae (3.6%), Rubiaceae (3.6 %), Rutaceae (3.6%), Solanaceae (3.6%), to Piperaceae (3.2%).

The use of plants as a source of medicine is a tradition that has been passed down from generation to generation in Indonesia, including South Sumatra. This is because certain plants naturally produce various kinds of chemical compounds pivotal in treating various diseases. The knowledge acquired from generation to generation is still preserved today, especially in rural communities. In rural areas, health facilities are inadequate. Thus, people are very dependent on these medicinal plants to treat various symptoms of disease (Sarina et al., 2023).

Not only used as traditional medicines, plants are also used as cosmetics, building materials, and crafts. As traditional cosmetics, they are processed as deodorants, anti-acne, facial skin care, dental care, anti-dandruff, skincare, hair care, and so on. Meanwhile, the diseases that are treated using plants traditionally include malaria, high blood pressure, anemia, blood sugar, cholesterol, toothache, stomachache, and even deadly diseases such as cancer and tumors.

Table 1. Ethnobotanical Data of South Sumatera, Indonesia**.**

No.	Families	Plant Species	Diseases / Uses	References
1.	Acanthaceae	*Acanthus ilicifolius*	Boil	(Sarno et al., 2013)
		Andrographis paniculata	Cancer, fever	(Rizal et al., 2021)
		Avicennia alba	Stomach ache	(Sarno et al., 2013)
		Graptophyllum pictum	Ethnomedicine	(Pujihastuti et al., 2020)
		Ruellia simplex	Ethnomedicine	(Pujihastuti et al., 2020)
		Strobilanthes crispus	Back pain	(Sarina et al., 2023)
2.	Acoraceae	*Acorus calamus*	Baby skin care	(Tanzerina et al., 2017).
3.	Aizoaceae	*Sesuvium portulacastrum*	Typhus	(Sarno et al., 2013)
4.	Amaranthaceae	*Achyranthes aspera*	Heart disease	(Saputri et al., 2022).
		Amaranthus hybrids	Blood booster	(Rizal et al., 2021).
5.	Amaryllidaceae	*Allium ascalanicum*	Fever	(Rizal et al., 2021)
		Allium cepa	Ethnomedicine	(Pujihastuti et al., 2020)
		Amaryllis belladonna	Ethnomedicine	(Dahlianah et al., 2021)
6.	Ancistroladaceae	*Anchistrocladus tectorius*	Ethnomedicine	(Pujihastuti et al., 2020)
7.	Annonaceae	*Anonna muricata*	Cholesterol	(Rizal et al., 2021).
		Cananga odorata	Anti odor	(Tanzerina et al., 2019)
8.	Apocynaceae	*Alstonia scholaris*	Tooth ache	(Sarina et al., 2023)
		Catharanthus roseus	Ethnomedicine	(Pujihastuti et al., 2020)
9.	Araceae	*Alocasia longiloba*	Ethnomedicine	(Pujihastuti et al., 2020)
		Alocasia plumbea	Ethnomedicine	(Hastiana, Novitasari, et al., 2023)
		Colocasia esculenta	Ethnomedicine	(Pujihastuti et al., 2020)
		Typonium flageliformae	Hipertiroid	(Saputri et al., 2022).
10.	Araliaceae	*Nothopanax scutellarium*	Hair care	(Tanzerina et al., 2017)

Table 1. *Cont.*

No.	Families	Plant Species	Diseases / Uses	References
11.	Arecaceae	*Areca catechu*	Ethnomedicine	(Pujihastuti et al., 2020)
		Cocus nucifera	Food poisoning	(Sarina et al., 2023)
		Daemonorops draco	Fever	(Sarina et al., 2023)
		Elais guineensis	Ethnomedicine	(Dahlianah et al., 2021)
		Nypa fruticans	Ethnomedicine	(Dahlianah et al., 2021)
		Salacca wallichiana	Postnatal care	(Sarina et al., 2023)
12.	Asparagaceae	*Cordyline fruticose*	Ethnomedicine	(Pujihastuti et al., 2020)
		Tabernaemontana divaricate	Ethnomedicine	(Pujihastuti et al., 2020)
		Tabernaemontana macrocarpa	Ethnomedicine	(Pujihastuti et al., 2020)
		Tylophora villosa	Ethnomedicine	(Pujihastuti et al., 2020)
13.	Asphodelaceae	*Aloe vera*	Hair fertilizer, burns, lowers blood sugar	(Rizal et al., 2021).
14.	Aspleniaceae	*Asplenium nidus*	Ethnomedicine	(Pujihastuti et al., 2020)
15.	Asteraceae	*Ageratum conyzoides*	Diarrhea, wounds, hypertension, fever	(Hastiana, Novitasari, et al., 2023)
		Blumea balsamifera	Jaundice and postnatal care	(Sarina et al., 2023)
		Clibadium surinamense	Ethnomedicine	(Pujihastuti et al., 2020)
		Cosmos caudatus	Skin care, mouth, body odor	(Tanzerina et al., 2017)
		Eclipta alba	Hair care and leucorrhea	(Tanzerina et al., 2017)
		Elephanthopus scaber	Heartburn	(Sarina et al., 2023)
		Emillia sochinfoliia	Eyes and skin care	(Tanzerina et al., 2017)
		Euphathorium odoratum	Magh/gerd	(Saputri et al., 2022)
		Gynura divaricata	Anti acne	(Tanzerina et al., 2017)
		Pluchea indica	Leucorrhea	(Tanzerina et al., 2017)
		Vernonia amygdalina	Anti acne and lose weight	(Tanzerina et al., 2017)
		Zinnia elegans	Hepatitis, boils, itching	(Hastiana, Novitasari, et al., 2023)
16.	Aviaceae	*Apium graveolens*	Lowers blood pressure	(Rizal et al., 2021).
17.	Bacellaceae	*Amredera cordifolia*	Strokes	(Saputri et al., 2022).
		Andrera cardifolia	Acne	(Tanzerina et al., 2017)
18.	Bignonaceae	*Oroxylum indicun*	Postnatal care	(Tanzerina et al., 2017).
19.	Blechnaceae	*Blechnum finlaysonianum*	Ethnomedicine	(Pujihastuti et al., 2020)
		Stenochlaena palustris	Ethnomedicine	(Pujihastuti et al., 2020)
20.	Bombacaceae	*Ceiba petandra*	Boil	(Sarina et al., 2023)
21.	Bromeliaceae	*Ananas comosus*	Headache	(Sarina et al., 2023)
22.	Cactaceae	*Hylocereus costaricensis*	Lowers blood pressure, cancer	(Rizal et al., 2021).
		Hylocereus polyrhizus	Ethnomedicine	(Dahlianah et al., 2021)
23.	Caesalpiniaceae	*Tamarindus indica*	Flu	(Sarina et al., 2023)
24.	Campanulaceae	*Hippobroma longiflora*	Eyes infection	(Sarina et al., 2023)
		Isotoma longiflora	Cataract	(Rizal et al., 2021)
25.	Cannabaceae	*Trema orientalis*	Scabies/itching	(Sarina et al., 2023)
26.	Caricaceae	*Carica papaya*	Back pain	(Sarina et al., 2023)
27.	Clusiaceae	*Garcinia xanthochymus*	Ethnomedicine	(Pujihastuti et al., 2020)
28.	Coctaceae	*Coctus specious*	Kidney diseases and ulcers	(Rizal et al., 2021).
29.	Convolvulaceae	*Ipomoea aquatica*	Ethnomedicine	(Dahlianah et al., 2021)
		Ipomoea batatas	Ethnomedicine	(Dahlianah et al., 2021)
30.	Crassulaceae	*Kalanchoe laciniata*	Anti malaria	(Margarethy et al., 2019)
		Kalanchoe pinnata	Fever	(Sarina et al., 2023)
31.	Cucurbitaceae	*Cucumis sativus*	Ethnomedicine	(Sarina et al., 2023)
		Iuffa acutangula	Lowers blood pressure	(Rizal et al., 2021)
		Momordica charantia	Fever	(Sarina et al., 2023)
32.	Dennstaedtiaceae	*Lindsaea ensifolia*	Ethnomedicine	(Pujihastuti et al., 2020)
33.	Dilleniaceae	*Dillenia suffruticosa*	Urolitiasis	(Sarina et al., 2023)
		Tetracera indica	Urolitiasis	(Sarina et al., 2023)
		Tetracera scandens	Ethnomedicine	(Sarina et al., 2023)

Table 1. *Cont.*

34.	Dioscoreaceae	*Dioscorea pyrifolia*	Ethnomedicine	(Pujihastuti et al., 2020)
35.	Euphorbiaceae	*Claoxylon indicum*	Anti malaria	(Margarethy et al., 2019)
		Euphorbia hirta	Lung disease	(Saputri et al., 2022)
		Euphorbia tirucalli	Warts and tootache	(Hastiana, Novitasari, et al., 2023)
		Homalanthus populifolius	Ethnomedicine	(Pujihastuti et al., 2020)
		Jatropha curcas	Ethnomedicine	(Pujihastuti et al., 2020)
		Macaranga trichocarpa	Ethnomedicine	(Pujihastuti et al., 2020)
		Mallotus japonicus	Ethnomedicine	(Pujihastuti et al., 2020)
		Manihot esculenta	Ethnomedicine	(Dahlianah et al., 2021)
		Phyllanthus disthicus	Kidney disease	(Saputri et al., 2022)
		Phyllanthus niruri	Hearth and lung disease	(Saputri et al., 2022)
		Sauropus androgynus	Hair care and breastfeeding	(Tanzerina et al., 2017)
36.	Fabaceae	*Bauhinia semibifida*	Ethnomedicine	(Pujihastuti et al., 2020)
		Calopogonium mucunoides	Ethnomedicine	(Pujihastuti et al., 2020)
		Cassia alata	Ethnomedicine	(Pujihastuti et al., 2020)
		Erythrina fusca	Jaundice	(Sarina et al., 2023)
		Erytrina viriegata	Lowers fever	(Saputri et al., 2022)
		Flemingia strobilifera	Body aches and increases appetite	(Sarina et al., 2023)
		Mimosa pudica	Body aches and increases appetite	(Sarina et al., 2023)
		Parkia speciosa	Bloating	(Sarina et al., 2023)
		Pithecellobium jiringa	Nervous disease	(Sarina et al., 2023)
		Senna alata	Constipation	(Sarina et al., 2023)
		Spatholobus ferrugineus	Postnatal care	(Sarina et al., 2023)
		Uraria crinite	Ethnomedicine	(Pujihastuti et al., 2020)
		Vigna cylindrica	Ethnomedicine	(Dahlianah et al., 2021)
		Vigna radiata	Magh	(Saputri et al., 2022)
37.	Hypericaceae	*Cratoxylum formosum*	Ethnomedicine	(Pujihastuti et al., 2020)
38.	Hypoxidaceae	*Curculigo latifolia*	Ethnomedicine	(Pujihastuti et al., 2020)
39.	Lamiaceae	*Clerodendrum calamitosum*	Ethnomedicine	(Pujihastuti et al., 2020)
		Coleus amboinicus	Breastfeeding	(Tanzerina et al., 2017)
		Mentha arvensis	Skin care	(Tanzerina et al., 2017)
		Ocimum citrodorum	Lowers blood pressure	(Rizal et al., 2021)
		Ocimum Americanum	Deodorant and halitosis	(Tanzerina et al., 2017)
		Ocimum basilicum	Deodorant	(Tanzerina et al., 2017)
		Ocimum citriodorum	Anti odor	(Tanzerina et al., 2019)
		Ocimum sanctum	Ethnomedicine	(Pujihastuti et al., 2020)
		Ocimum tenuiflorum	Ethnomedicine	(Pujihastuti et al., 2020)
		Orthosiphon aristatus	Back pain	(Sarina et al., 2023)
		Orthosiphon aristatus	Lowers blood glucose level	(Rizal et al., 2021)
		Plecanranthus amboinicus	Breastfeeding	(Tanzerina et al., 2017)
		Pogostemon cablin	Deodorant	(Tanzerina et al., 2017)
40.	Lauraceae	*Cinnamomum tamala*	Ethnomedicine	(Pujihastuti et al., 2020)
		Lindera benzoin	Ethnomedicine	(Pujihastuti et al., 2020)
		Persea americana	Lowers blood pressure	(Sarina et al., 2023)
41.	Phyllanthaceae	*Arcangelisia flava*	Ethnomedicine	(Pujihastuti et al., 2020)
		Baccaurea macrocarpa	Ethnomedicine	(Pujihastuti et al., 2020)
		Fibraurea tinctoria	Ethnomedicine	(Pujihastuti et al., 2020)
		Phyllanthus niruri	Muscle stiffnes	(Sarina et al., 2023)
		Sauropus androgynous	Ethnomedicine	(Pujihastuti et al., 2020)
		Tinospora crispa	Immune booster	(Sarina et al., 2023)
		Tinospora sinensis	Fertility	(Saputri et al., 2022)
42.	Liliaceae	*Allium sativum*	Flu and burns	(Sarina et al., 2023)
43.	Limnocharitaceae	*Limnocharis flava*	Ethnomedicine	(Hastiana, Novitasari, et al., 2023)

Table 1. *Cont.*

44.	Loranthaceae	*Scurrula artopurpurea*	Cancer, tumor, cyst	(Saputri et al., 2022)
		Scurrula ferruginea	Lowers blood pressure	(Sarina et al., 2023)
45.	Lythaceae	*Lawosonnia innermis*	Nail dan hair care	(Tanzerina et al., 2017)
46.	Magnoliaceae	*Magnoolia alba*	Odor and leucorrhoea	(Tanzerina et al., 2017).
47.	Malvaceae	*Ceiba pentandra*	Eyes irritations	(Saputri et al., 2022)
		Hibiscus cannabinus	Ethnomedicine	(Pujihastuti et al., 2020)
		Hibiscus sabdariffa	Cancer	(Rizal et al., 2021)
		Hisbiscus rosasinensis	Hair care	(Tanzerina et al., 2017)
48.	Marattiaceae	*Ptisana salicina*	Ethnomedicine	(Pujihastuti et al., 2020)
49.	Melastomaceae	*Melastoma candidum*	Ethnomedicine	(Pujihastuti et al., 2020)
		Melastoma malabathricum	Maag	(Sarina et al., 2023)
50.	Meliaceae	*Azadirachta indica*	Anti malaria	(Margarethy et al., 2019)
		Lansium domesticum	Bloating	(Sarina et al., 2023)
		Lansium parasiticum	Anti malaria	(Margarethy et al., 2019)
		Swietenia macrophylla	Anti malaria	(Margarethy et al., 2019)
		Xylocarpus granatum	Itchy	(Sarno et al., 2013)
51.	Moraceae	*Artocarpus altilis*	Lowers blood pressure	(Rizal et al., 2021)
		Artocarpus heterophyllus	Baby care	(Sarina et al., 2023)
		Ficus curtipes	diarrhea	(Sarina et al., 2023)
		Ficus hirta	Ethnomedicine	(Pujihastuti et al., 2020)
52.	Muntingiaceae	*Muntingia calabura*	Ethnomedicine	(Pujihastuti et al., 2020)
53.	Musaceae	*Musa acuminate*	Postnatal care	(Sarina et al., 2023)
		Musa babisiana	Hemorrhoids	(Saputri et al., 2022)
		Musa paradisiaca	Feverish	(Sarina et al., 2023)
54.	Myrtaceae	*Eucalyptus calophylla*	Ethnomedicine	(Pujihastuti et al., 2020)
		Eugenia polyantha	Pain	(Sarina et al., 2023)
		Malaleuca leucadendra	Ethnomedicine	(Pujihastuti et al., 2020)
		Psidium guajava	Diarrhea	(Sarina et al., 2023)
		Rhodamnia cinerea	Constipation	(Sarina et al., 2023)
		Rhodomyrtus tomentosa	Lowers blood pressure	(Salni et al., 2022)
		Syzygium aqueum	Ethnomedicine	(Dahlianah et al., 2021)
		Syzygium cumini	Stomach ache	(Hastiana, Novitasari, et al., 2023)
		Syzygium polyanthum	Diabetic	(Rizal et al., 2021).
54.	Nyctaginaceae	*Mirabilis jalapa*	Skin care	(Tanzerina et al., 2017).
55.	Oleaceae	*Jasminum officinalle*	Facial care, hair care, weight loss and body odor removal	(Tanzerina et al., 2017).
		Olea europaea	Postnatal care	(Tanzerina et al., 2017).
56.	Onagraceae	*Ludwigia octovalvis*	Anti malaria	(Margarethy et al., 2019)
57.	Oxalidaceae	*Averrhoa bilimbi*	Blood pressure and cough	(Rizal et al., 2021).
		Averrhoa carambola	Lowers blood pressure	(Rizal et al., 2021).
58.	Pandanaceae	*Benstonea affinis*	Craft material	(Tanzerina et al., 2022).
		Benstonea atrocarpa	Craft materials	(Tanzerina et al., 2022).
		Pandanus amaryllfolius	Medicine, cosmetics, foodstuffs, indigenous material	(Tanzerina et al., 2022).
		Pandanus helicopus	Building material	(Tanzerina et al., 2022).
		Pandanus lais	Medicine, cosmetic, building material	(Tanzerina et al., 2022).
		Pandanus tectorius	Perawatan rambut	(Tanzerina et al., 2017)
59.	Passifloraceae	*Passiflora foetida*	Feverish	(Sarina et al., 2023)
		Passiflora suberosa	Ethnomedicine	(Pujihastuti et al., 2020)
60.	Phyllanthaceae	*Arcangelisia flava*	Ethnomedicine	(Pujihastuti et al., 2020)
		Baccaurea macrocarpa	Ethnomedicine	(Pujihastuti et al., 2020)
		Fibraurea tinctoria	Ethnomedicine	(Pujihastuti et al., 2020)
		Phyllanthus niruri	Pain	(Sarina et al., 2023)
		Sauropus androgynous	Ethnomedicine	(Pujihastuti et al., 2020)
		Tinospora crispa	Immune booster	(Sarina et al., 2023)
		Tinospora sinensis	Fertility	(Saputri et al., 2022)

Table 1. *Cont.*

61.	Piperaceae	*Peperomia pellucida*	Fever	(Sarina et al., 2023)
		Piper acutilimbum	Ethnomedicine	(Pujihastuti et al., 2020)
		Piper aduncum	Ethnomedicine	(Pujihastuti et al., 2020)
		Piper betle	Eyes irritation / infections	(Sarina et al., 2023)
		Piper crocatum	Ethnomedicine	(Pujihastuti et al., 2020)
		Piper ornatum	Strokes	(Saputri et al., 2022)
		Piper porphyrophyllum	Ethnomedicine	(Pujihastuti et al., 2020)
		Piper pubela	Fertility	(Saputri et al., 2022)
62.	Poaceae	*Andropogon nardus*	Ethnomedicine	(Saputri et al., 2022)
		Bambusa vulgaris	Cough	(Sarina et al., 2023)
		Cymbopogon atratus	Gout	(Rizal et al., 2021).
		Cymbopogon nardus	Postnatal care	(Sarina et al., 2023)
		Eleusine indica	Hair care	(Tanzerina et al., 2017)
		Gigantochloa verticillata	Anti malaria	(Margarethy et al., 2019)
		Imperata cylindrica	Feverish	(Sarina et al., 2023)
		Lophatherum gracile	Ethnomedicine	(Pujihastuti et al., 2020)
		Oryza sativa	Ethnomedicine	(Pujihastuti et al., 2020)
		Saccharum officinarum	Eyes irritation/infection	(Sarina et al., 2023)
		Zea mays	Ethnomedicine	(Dahlianah et al., 2021)
63.	Polypodiaceae	*Drynaria quercifolia*	Ethnomedicine	(Pujihastuti et al., 2020)
		Pyrrosia adnascens	Ethnomedicine	(Pujihastuti et al., 2020)
64.	Portulaceae	*Portulaca gandifolia*	Fever	(Saputri et al., 2022)
		Portulaca oleraceae	Ethnomedicine	(Pujihastuti et al., 2020)
65.	Pteridaceae	*Acrostichum aureum*	Eyes infections/irritations	(Sarno et al., 2013)
66.	Rhamnaceae	*Ziziphus mauritiana*	Ethnomedicine	(Pujihastuti et al., 2020)
67.	Rhizophoraceae	*Rhizophora* sp.	Ethnomedicine	(Dahlianah et al., 2021)
68.	Rosaceae	*Rosa* sp.	Body care	(Tanzerina et al., 2017).
69.	Rubiaceae	*Coffea canephora*	Wounds	(Rizal et al., 2021)
		Gardenia augusta	Diabetic	(Sarina et al., 2023)
		Morinda citrifolia	Maag	(Sarina et al., 2023)
		Mussaenda frondosa	Ethnomedicine	(Pujihastuti et al., 2020)
		Mussaenda pubescens	Ethnomedicine	(Dahlianah et al., 2021)
		Oldenladia lancifolia	Stomach	(Sarina et al., 2023)
		Palicourea guianensis	Ethnomedicine	(Pujihastuti et al., 2020)
		Psychotria nervosa	Ethnomedicine	(Pujihastuti et al., 2020)
		Uncaria gambir	Mouth care	(Tanzerina et al., 2017)
70.	Rutaceae	*Aegle mamelos*	Hair care	(Tanzerina et al., 2019)
		Citrofortunella macrocarpa	Ethnomedicine	(Hastiana, Novitasari, et al., 2023)
		Citrus aurantifolia	Ethnomedicine	(Pujihastuti et al., 2020)
		Citrus aurantiifolia	Cough	(Sarina et al., 2023)
		Citrus hystrix	Ethnomedicine	(Pujihastuti et al., 2020)
		Citrus limon	Facial care	(Tanzerina et al., 2017)
		Citrus x microcarpa	Ethnomedicine	(Pujihastuti et al., 2020)
		Euodia lepta	Fever	(Sarina et al., 2023)
		Murraya paniculata	Facial care	(Tanzerina et al., 2019)
71.	Sapindaceae	*Nephelium lappaceum*	Ethnomedicine	(Pujihastuti et al., 2020)
72.	Schizaeaceae	*Actinostachys digitata*	Ethnomedicine	(Pujihastuti et al., 2020)
73.	Simaroubacae	*Brucea javanica*	Anti malaria	(Margarethy et al., 2019)
74.	Solanaceae	*Capsicum frustescens*	Fever	(Rizal et al., 2021)
		Datura metel	Ethnomedicine	(Hastiana, Novitasari, et al., 2023)
		Nicotiana tabacum	Anti malaria	(Margarethy et al., 2019)
		Physalis angulate	Ethnomedicine	(Pujihastuti et al., 2020)
		Physalis peruviana	Heartburn	(Sarina et al., 2023)
		Solanum lycopersicum	Ethnomedicine	(Hastiana, Novitasari, et al., 2023)
		Solanum lycopersicum	Ulcer	(Rizal et al., 2021)
		Solanum melongena	Ethnomedicine	(Dahlianah et al., 2021)
		Solanum torvum	Eye irritation / infection	(Rizal et al., 2021)

Table 1. *Cont.*

75.	Theaceae	*Camellia sinensis*	Facial care	(Tanzerina et al., 2017).
76.	Thymelaceae	*Phaleria macrocarpa*	Diabetic	(Sarina et al., 2023)
77.	Urticaceae	*Poikilospermum suaveolens*	Ethnomedicine	(Pujihastuti et al., 2020)
78.	Verbenaceae	*Clerodendrum japonicum*	Postnatal care	(Sarina et al., 2023)
		Lantana camara	Hearthburn	(Sarina et al., 2023)
		Peronema canescens	Musslce care	(Sarina et al., 2023)
		Stachyrtapeta jamaicencis	Leucorrhoea	(Tanzerina et al., 2017)
79.	Zingiberaceae	*Kaempferia galanga*	Cold	(Sarina et al., 2023)
		Kamferia rotundus	Skin care	(Tanzerina et al., 2017)
		Zingiber montanum	Blood circulation	(Hastiana, Nawawi, et al., 2023)
		Zingiber officinale	Jaundice	(Sarina et al., 2023)
		Zingiber zerumbet	Ethnomedicine	(Pujihastuti et al., 2020)

As a mega biodiversity country, Indonesia's nature provides a variety of needs that can be utilized by its people, such as the need for medicinal plants, especially for rural communities, such as in South Sumatra. The Besemah tribe, located in Lahat Regency, is an example of a community group that utilizes biodiversity. The people use natural plants as a source of medicines, cosmetics, religious activities, death ceremonies, and so on. Pandanaceae is a plant family that is often used as a functional plant for this community. Like the *Pandanus amaryllifolius* species which produces a distinctive aroma that is often used as food coloring and food fragrance for local people (Tanzerina et al., 2022).

The Ogan people are known to still preserve the local heritage of their ancestors. The medicinal plants they process can be obtained directly from the forest, planted themselves, or purchased from sellers at the market. These plants are traditionally used as medicines. The medicinal plants used by the Ogan Tribe in Beringin Dalam Village can be in the form of trees, bushes, herbs, shrubs, or lianas. In this tribe, tree-based medicinal plants are the main source of medicine with a usage percentage of 35.38% consisting of 23 tree species. The dominance of these trees is associated with the area's history which was dominated by primary forest vegetation. On the other hand, there are as many as 37 species of medicinal plants planted themselves by residents. Of the many indications of diseases that are treated using medicinal plants, aches, appetite enhancers, heartburn, and bath additives for women after giving birth are the most dominant. Moreover, these plants can be used by boiling, kneading, mashing, and burning (Sarina et al., 2023)

The Besemah tribe who inhabit Lahat Regency, South Sumatra, is also surrounded by primary and secondary forest areas, rich in plant resources, such as Zingiberaceae, Asteraceae, Myrtaceae, Rosaceae, and Lamiaceae. Therefore, ethnobotanical studies in this area aim to preserve its germplasm Tanzerina et al., 2019).

The Anak Dalam Tribe, Sungai Jernih Village, Rupit District, North Musi Rawas Regency, also uses natural plants for various purposes. As a tribe that has lived a sedentary life, the tribe still uses plants as a source of medicine. There are 93 types of medicinal plants whether obtained from nature, close to where they live, or cultivated. The medicinal plants consist of 48 families, dominated by the Fabaceae, Piperaceae, Apocynaceae, and Euphorbiaceae families (Pujihastuti et al., 2020)

For the people of Pagar Ruyung Village, Kotaagung District, Lahat Regency, South Sumatra, leaves are the most widely used in the making of traditional medicine. Not only using the common part of the plants, the sap is also used as traditional medicine. Leaves are easy to process, and easy to obtain without directly killing the organism, and leaf regeneration is relatively rapid. Leaves also contain various phytochemical compounds such as phenol, chlorophyll, tannin, alkaloids, and potassium. They are also thought to be a storage for various types of photosynthesis products. Ethnomedicine is used to treat a wide range of diseases, from mild-common illnesses to fatal illnesses such as cancer (Rizal et al., 2021).

Javanese transmigrants who live in East Buay Madang District, East OKU Regency, South Sumatra also have their ethnobotanical activities. In this community, there are 27 plant families used as sources of medicines with Zingiberaceae as the dominant family and rhizomes as one of the sources used as traditional medicines. However, it turns out that the leaves are also common (Saputri et al., 2022).

In the community of Manggaraya village, Tanjung Lago subdistrict, Banyuasin Regency, South Sumatra, there are 21 families used as a source of traditional medicines consisting of 38 plant species. Moreover, Ethnobotanical plants in these communities are also used as food and horticultural crops (Dahlianah et al., 2021).

People living on the Banyuasin Peninsula are familiar with mangrove plants. Mangroves are also used by local people as traditional medicines to treat various complaints such as typhus, stomach aches, itching, and eye pain. The used parts include leaves, sap, fruit, and even all parts of the plant. Mangrove plants produce secondary metabolite compounds which are produced during environmental stress to protect themselves from pests and pathogens. The resulting secondary metabolite

compounds can be used as medicine for the community (Sarno et al., 2013).

Plants are also used to treat malaria, a disease that many rural communities suffer from. This disease is caused by a vector in the form of the Anopheles mosquito which inhabits many forests in South Sumatra. Several tribes that use plants as anti-malaria in South Sumatra are Teloko, Daya, Pegagan, Meranjat, and Lintang (Margarethy et al., 2019). The source of knowledge on the use of plants as malaria medicine can be obtained from knowledge obtained from their ancestors, relatives/friends, family, formal education, non-formal education, and even from dreams/inspiration. These plants can be made into potions originating from one type of plant or a combination of several plants (Margarethy et al., 2019).

In the Teloko tribe, the plants used as anti-malaria consist of *C. papaya*, *Nicotiana tabacum*, *Alstonia scholaris*, *Tinospora crispa*, and *Lansium parasiticum*. The Daya tribe uses the plants *Tinospora crispa*, *Swietenia macrophylla*, *Giganthocloa verticillata*, *Kalanchoe laciniata*, *Ludwigia octovalvis*, *Claoxylon indicum*, the Pegagan tribe uses the *Luffa acutangula* plant, the climbing tribe uses *Azadirachta indica*, *Brucea javanica*, *Tinospora crispa*, and *Crescentia cujete*. Furthermore, the treatment of malaria in the Lintang tribe uses *Citrus aurantiifolia*, *Imperata cylindrica*, and several other unidentified plants (Margarethy et al., 2019).

Plants produce many bioactive compounds stored in the form of essential oils that are used to protect themselves against various kinds of predators. These essential oils can be used as a source of medicine or cosmetics for humans (Tanzerina et al., 2019). In the Ogan tribe of Beringin Village, leaves are the most widely used part of the plant. This is because the leaves contain many bioactive compounds which include tannins, flavonoids, phenols, and so on. The method of using the drug is adjusted. The community believes that the boiling medicine technique is more effective because the boiling process can release the active compounds contained in the plant, and boiling can also reduce the bitter taste of the plant and kill pathogens found in medicinal plants (Sarina et al., 2023).

Medicinal plants are equipped with special anatomical structures accumulating certain components. The leaves and stems of plants in the Lamiaceae family have oil cells which can be found in the cortex tissue. In certain plants such as this family, glandular trichomes can also be found which play an important role in the synthesis of plant bioactive compounds. On the leaves, these glandulars can be found on the upper and lower epidermis. Apart from that, in several Lamiaceae species, there are also idioblast cells pivotal in the synthesis of bioactive compounds Tanzerina et al., 2017).

Pandanaceae are widely used by the Besemah tribe as building materials for crafts, as well as cosmetics and medicines. The content of secondary metabolites in this family, such as polyphenols, saponins, and terpenoids, has certain health benefits. The resulting aroma can be used as a healthy natural food fragrance and coloring. This group of plants is also used by the community as a mixture for bathing the corpses of the dead. Furthermore, the leaves of the plant are used as decoration, and can even be arranged into the roof of a building (Tanzerina et al., 2022).

The Zingiberaceae family is one of the plant families most often used in traditional medicine. This group of plants is often used as a cooking spice. In the pharmaceuticals, for example, ginger contains bioactive compounds that can act as antibacterials, antipyretics, fever reducers, and so on (Saputri et al., 2022).

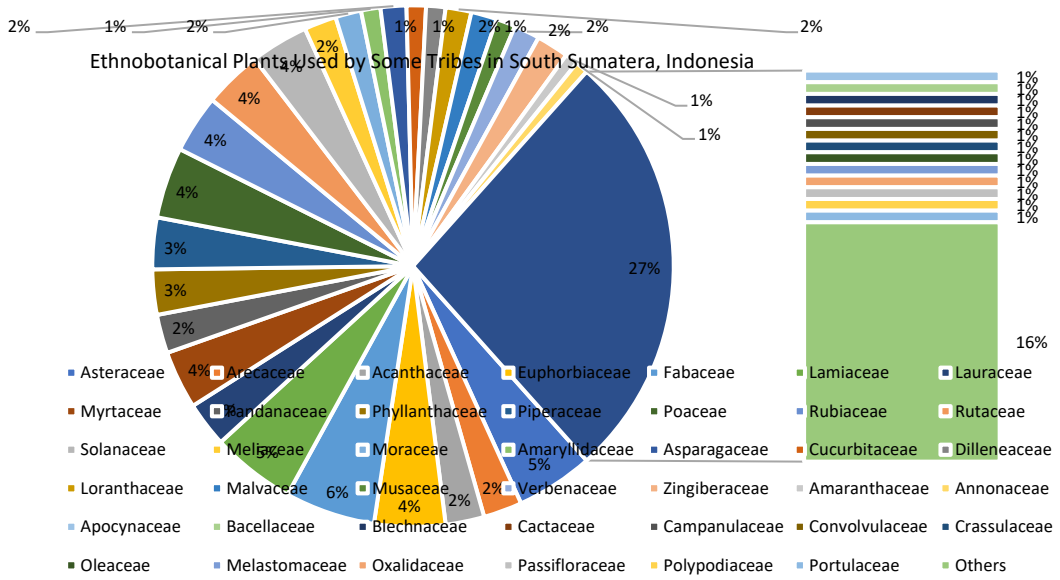

Figure 1. Plants families used in ethnobotanical purposes of South Sumatera, Indonesia.

In processing plants as traditional medicine, the plant can be processed from certain parts or all parts of the plant. The parts of plants used as a source of medicine include leaves, roots, stems, flowers, fruit, and sap. Based on how traditional medicine is consumed, people have their methods, sometimes in different places, the methods are different. The most common ways are drinking, applying topically, dripping, compressing, eating, and bathing (Sarina et al., 2023). However, the use of plants as traditional medicine is now starting to be abandoned by the younger generation. This is due to the increasingly limited number of medicinal plants in nature, the process of making or concocting medicines which is relatively complicated, and the efficacy of medicines is not necessarily effective. Moreover, the presence of experts (shamans) who understand medicinal plants is also starting to decrease (Sarina et al., 2023).

Based on the results of this review (Figure 1), it can be concluded that ethnobotanical activities in South Sumatra are very prospective, so they can be used as a reference in the bioindustry or pharmaceutical industry (Figure 2). However, from these ethnobotanical activities, there is a need for scientific studies regarding the efficacy of the drugs. What is more important is to conserve these plants as germplasms that must be protected as a part of the Indonesian biodiversity.

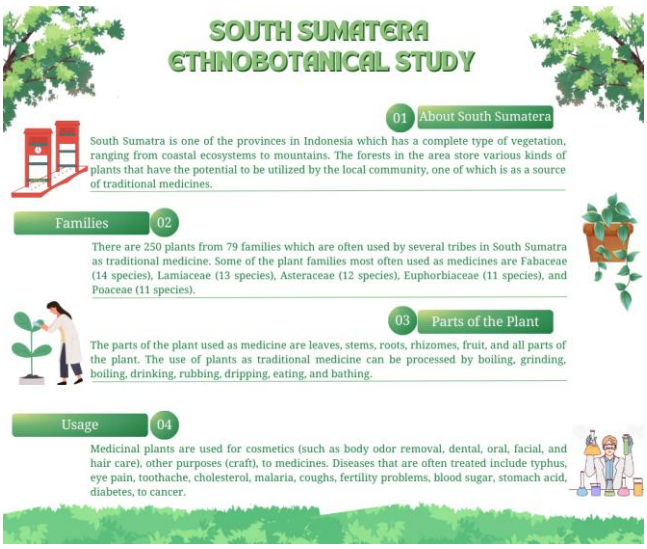

Figure 2. Review of South Sumatera Ethnobotanical Activities.

CONCLUSIONS

South Sumatra has a quite high biodiversity, especially plants. These plants are a source of traditional medicines by local communities to produce traditional medicines and cosmetics. There are 250 plant species from 79 families used by local people. The dominant plant families used in their ethnobotanical activities are Fabaceae (5.6%), Lamiaceae (5.2%), Asteraceae (4.8%), Euphorbiaceae (4.4%), Poaceae (4.4%), Myrtaceae (3.6%), Rubiaceae (3.6 %), Rutaceae (3.6%), Solanaceae (3.6%), to Piperaceae (3.2%). Considering the great potential of the plants, it is necessary to carry out further research activities regarding their pharmacological potential along with the need for a good conservation strategy to maintain their sustainability.

***Authors' Contributions*:** Angga Puja Asiandu initiated this writing idea and Widya Sari participated in finishing this manuscript. All authors read and approved the final version of the manuscript.

***Competing Interests*:** The authors declare that there are no competing interests.

Funding: The authors declare that there is no funding which has role in finishing this manuscript.

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