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Vegetation analysis and ethnobotanical study of rubber agroforests in South Sumatra, Indonesia

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Abstract. *Eddy S, Rizal S, Kartika T, Sari KJ. 2023. Vegetation analysis and ethnobotanical study of rubber agroforests in South Sumatra, Indonesia 24: 2276-2283.* Rubber agroforests (RA) play essential roles in conserving plant biodiversity and delivering ecosystem services while providing socio-economic benefits to local communities. This study aims to examine the composition and structure of vegetation and to explore the ethnobotanical uses of plants in rubber agroforests located in Southern Tempirai Village, North Penukal Sub-district, Penukal Abab Lematang Ilir (PALI) District, South Sumatra, Indonesia. Vegetation data were collected using the purposive sampling method in three different rubber agroforests by establishing transect lines and observation plots according to the plant life form (seedling, sapling, and tree) at each sampling point. Ethnobotanical data were collected through interviews with plant-using communities through a purposive sampling method. The results showed that there were 17 plant species belonging to 13 families documented in the studied area. The most dominant species at seedling stage (including understorey) was senduduk (*Melastoma malabathricum*) with an IVI (Important Value Index) of 38.79, while the most dominant species at sapling and tree layers was rubber (*Hevea brasiliensis*) with IVI of 185.48 and 300.00, respectively. In the rubber agroforests studied, the species diversity was classified as very low with a diversity index (H') value of 0.85. There are various ethnobotanical uses plants found in the rubber agroforest with the most common use by the community was for traditional medicines (*Mimosa pudica, Melastoma malabathricum, Gleichenia linearis, Ageratum conyzoides, Piper betle, Stenochlaena palustris, Coffea* sp., *Salacca zalacca, Syzygium polyanthum, Sauropus androgynus, Imperata cylindrica, Areca catechu*). Other uses were for food ingredients (*Calamus* sp., *Coffea* sp., *Bambusa* sp, *Salacca zalacca, Syzygium polyanthum, Sauropus androgynus*), building materials (*Hevea brasiliensis, Areca catechu*), and household furniture (*Calamus* sp., *Bambusa* sp.). This study enriches the understanding regarding the importance of rubber agroforest in conserving germplasm diversity and maintaining the ethnobotanical knowledge of local communities.

Keywords: Ethnobotany, IVI, rubber agroforests, vegetation analysis

INTRODUCTION

Vegetation in the tropics exhibits differences in terms of species diversity, population density, abundance, floristic composition, vertical structure, and distribution patterns (Putz and Romero 2015; Addi et al. 2020). These differences provide insights that each vegetation community has distinct characteristics which are influenced by homospecific and heterospecific associations (Trogisch et al. 2017; Clark et al. 2018). Homospecific associations occur between individuals within the same plant species such as seedlings and mature trees (Murdjoko et al. 2016; Zambrano et al. 2022), whereas heterospecific associations are individual interactions between different plant species (Zhu et al. 2015; Johnson et al. 2017; Atanasso et al. 2019).

Vegetation diversity, structure, composition, and function are the most significant ecological attributes of a forest ecosystem as they show variation in response to the environment and anthropogenic variables (Shaheen et al. 2012; Drag et al. 2023). Vegetation analyses are useful for understanding the species composition and biodiversity status of a region, which also provide important information for conservation measures (Weigelt et al. 2019; Françoso et al. 2020). Such studies play a key role in describing the current condition of vegetation communities, such as forest and agroforest, and their management to carry out strategic actions (Eddy et al. 2019; Eddy et al. 2022). Vegetation studies might also be used to assess the changes in the structure and composition of vegetation to inform the process of vegetation succession (Tata et al. 2008).

Indonesia is the largest rubber producer and exporter in the world. Rubber plantations managed by small-scale farmers constitute the largest area in Indonesia compared to large-scale plantations managed by the government and corporates. According to data from the Directorate of Food Crops, Horticulture and Estate Crops Statistics (2020), the total area of rubber plantations managed by small-scale farmers in Indonesia was more than 3.3 million ha in 2020, of which 845,820 ha (approximately 25%) of such plantations are located in South Sumatra Province. In many cases, the rubber plantations of small-scale farmers are managed as rubber agroforest (RA). This land management is carried out by allowing wild plant species to grow together with the planted rubber trees so that they have some similar characteristics to complex forest conditions (e.g. canopy structure, great level of biodiversity) without the use of herbicides and fertilizers (Beukema et al. 2007).

Rubber agroforest has the potential to mitigate climate change as an effort to anticipate global warming by regulating the balance of carbon dioxide and oxygen in the air. In the tropics, the largest carbon emissions are driven by the conversion of primary forests into other land uses, such as agricultural lands (Eddy et al. 2021). Vice versa, the largest carbon sequestration can be contributed by the restoration of degraded and deforested lands to form primary and secondary forests (Basyuni et al. 2021). Rubber agroforest also contains biodiversity since it will develop into a secondary forest despite the vegetation community and biomass being dominated by rubber trees (Beukema et al. 2007; Muhdi et al. 2020; Siswo et al. 2022).

The ethnobotanical knowledge of the local community regarding plant species in rubber agroforest is critical for exploring the potential uses of plants in delivering ecosystem services while preserving local wisdom. Ecosystem services are services provided by ecosystems to humans in the form of provisioning services, regulatory services, cultural services, and supporting/habitat services (du Toit et al. 2018). Each plant species is an important component of ecosystem services which provides different types and amounts of goods to local communities (Panyadee et al. 2022). A large amount of traditional knowledge can emerge from the interactions between local people and their forest ecosystems which is useful in the discovery of novel sources of food, medicine and fiber of plant origin (Cámara-Leret and Dennehy 2019).

Considering the importance of rubber agroforest in terms of biodiversity and ecosystem services, this study specifically examined the structure and composition of vegetation as well as local knowledge about the uses of plants in rubber agroforest in Southern Tempirai Village, North Penukal Sub-district, Penukal Abab Lematang Ilir (PALI) District, South Sumatra, Indonesia. The results of this study are important for explaining the existing condition of rubber forests as successional forests. In addition, indigenous knowledge about the use of local plants can be important information for science as the basis of knowledge in the development of alternative sources of foods, medicines, fibers, and others.

MATERIALS AND METHODS

Study area

The rubber agroforest (RA) research area was located in Southern Tempirai Village, North Penukal Sub-district, Penukal Abab Lematang Ilir (PALI) District, South Sumatra Province, Indonesia (Figure 1). Rubber agroforest is one of the main sources of income for the inhabitants of Southern Tempirai Village, where the majority of the population's income is dominated by the agricultural sector with a total land area of around 2,800 Ha.

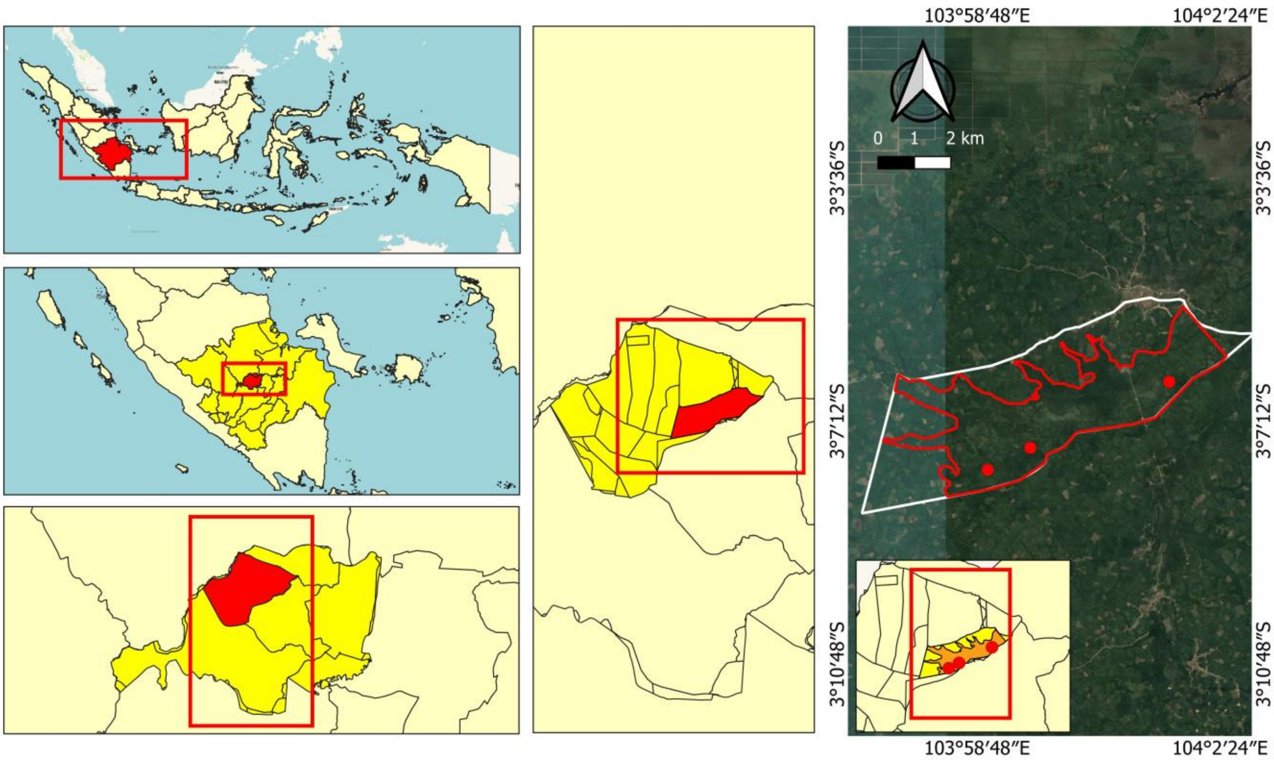

Figure 1. Map of the research location in Southern Tempirai Village, North Penukal Sub-district, Penukal Abab Lematang Ilir (PALI) District, South Sumatra, Indonesia

Collection of vegetation data

Vegetation data collection was carried out from May to June 2022 using a purposive sampling method. The RA sampling sites were at three locations (Figure 1) and their respective existing conditions are shown in Figure 2. Plant sampling was carried out using the line transect method with a length of 100 m with three transects were made for each sampling site. Observation plots were made along the transect line. Three observation plots were established on each transect with size based on plant growth stage, namely 10 x 10 m for trees, 5 x 5 m for saplings, and 1 x 1 m for seedlings (Mueller-Dombois and Ellenberg 1974). In total, there were 81 observation plots established in which each plant growth stage consisted 27 plots. Data collected for tree level included species name, number of each species, diameter at breast height (DBH), and basal area. On the other hand, for seedlings and saplings, only the name of the species and the number of individuals of each species were collected. All plant species within the observation plots were recorded on a tally sheet, collected for herbarium specimens, and all parts of the plant were photographed for species identification.

Collection of ethnobotanical data

Ethnobotanical data were obtained through interviews with local communities regarding the uses of plants that occurred in the RA, as well as the parts of the plant organs used. Respondents were determined by purposive sampling consisting of traditional healers, community leaders and users of plants in RA with a total of 25 respondents. Interviews were conducted with the respondents using a closed-ended questionnaire method. The information recorded from the community included the use of plants for medicines, foods, building materials, household furniture, and traditional ceremonies.

Data analysis

Vegetation data were calculated to obtain the values of density (individuals/ha), frequency (%), and dominance (m^2/ha) (Kent and Coker 1992; Rached-Kanouni et al. 2020). Important Value Index (IVI) was obtained by adding up the relative values of density, frequency, and dominance (Neelo et al. 2015). The community diversity index (H’) was determined using the Shannon diversity index (Magurran 2004) with the categories of low (H’≤1), moderate (3>H’>1), high (H’≥3) (Zaki et al. 2022).

Ethnobotanical data were collected from community members in relation to the uses of plants, and then the data were tabulated. In addition, data related to the commonly used parts of plant organs, such as leaves, stems, and fruits were also collected, as well as data collection on the habitat of these plants and their types, such as herbs, shrubs, lianas, and trees.

RESULTS AND DISCUSSION

Vegetation composition

From the observation plots across the three rubber agroforest areas, there were plant 17 species belonging to 17 genera, 13 families and 12 orders (Table 1 and Figure 3). The largest number of species recorded were from the orders Arecales (family Arecaceae) and Poales (family Poaceae) with three species each. Of these, four plant species, namely *H. brasiliensis*, *Coffea* sp., *Syzygium polyanthum*, and *Areca catechu* have tree habitus, while the others are herbs, shrubs, and lianas.

Vegetation quantitative structure

There were 15 species of plants at the seedlings and understorey layer, while for saplings there were only two species and only one species for trees. There were two dominant plant species seedlings at the seedlings and understorey layer, namely *M. malabathricum* and *A. conyzoides* with IVIs greater than 30% each (Table 2). Further, *H. brasiliensis* was found to be the dominant plant at both the sapling and tree levels (Tables 3 and 4). The species diversity index (H') was determined to be <1, which is very low (Table 5).

Ethnobotanical uses

Based on the interviews with the community members, the species documented in the rubber agroforests have various ethnobotanical uses, including traditional medicines, foods, and building materials. Most of the plants recorded are used for traditional medicines to treat hypertension, insomnia, diarrhea, headaches, skin diseases, ulcers, urinary stones, fever, and anemia.

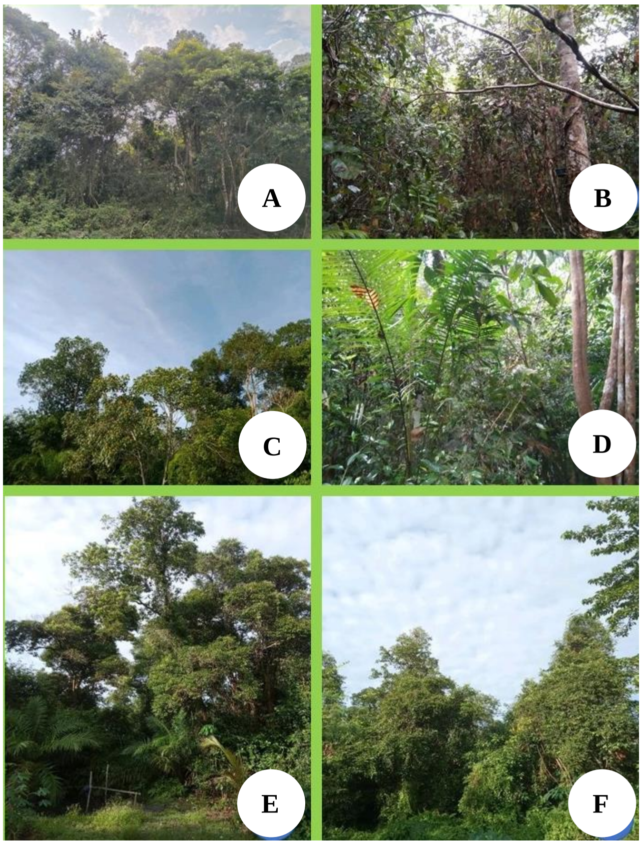

Figure 2. Conditions of the three rubber agroforests (RA) in Southern Tempirai Village, North Penukal Sub-district, PALI District, South Sumatra, Indonesia. Notes: RA 1 (A and B), RA 2 (C and D), and RA 3 (E and F)

Table 1. Composition of plant species in three rubber agroforests in Southern Tempirai Village, North Penukal Sub-district, PALI District, South Sumatra

Order	Family	Genus	Species	Local name
Arecales	Arecaceae	Areca	*Areca catechu*	Pinang
Arecales	Arecaceae	Calamus	*Calamus* sp.	Rotan
Arecales	Arecaceae	Salacca	*Salacca zalacca*	Salak
Asterales	Asteraceae	Ageratum	*Ageratum conyzoides*	Bandotan
Blechnales	Blechnaceae	Stenochlaena	*Stenochlaena palustris*	Lemidi
Euphorbiales	Euphorbiaceae	Hevea	*Hevea brasiliensis*	Karet
Fabales	Fabaceae	Mimosa	*Mimosa pudica*	Putri malu
Gentianales	Rubiaceae	Coffea	*Coffea* sp.	Kopi
Gleicheniales	Gleicheniaceae	Gleichenia	*Gleichenia linearis*	Resam
Malpighiales	Phyllanthaceae	Sauropus	*Sauropus androgynus*	Katu
Myrtales	Melastomaceae	Melastoma	*Melastoma malabathricum*	Senduduk
Myrtales	Myrtaceae	Syzygium	*Syzygium polyanthum*	Salam
Piperales	Piperaceae	Piper	*Piper betle*	Sirih
Poales	Poaceae	Bambusa	*Bambusa* sp.	Bambu
Poales	Poaceae	Cynodon	*Cynodon dactylon*	Rumput Gerinting
Poales	Poaceae	Imperata	*Imperata cylindrica*	Alang-Alang
Polypodiales	Pteridaceae	Acrostichum	*Acrostichum aureum*	Paku

Figure 3. The plant species found in rubber agroforests in Southern Tempirai Village, North Penukal Sub-district, PALI District, South Sumatra, respectively are: A. *M. malabathricum*, B. *M. pudica*, C. *A. aureum*, D. *Coffea* sp., E. *P. betle*, F. *H. brasiliensis*, G. *G. linearis*, H. *Calamus* sp., I. *A. conyzoides*, J. *S. palustris*, K. *A. catechu*, L. *Bambusa* sp., M. *I. cylindrica*, N. *S. androgynus*, O. *S. zalacca*, P. *S. polyanthum*, Q. *C. dactylon*

Table 2. Quantitative structure of seedlings and understorey in RA in Southern Tempirai Village, North Penukal Sub-district, PALI District, South Sumatra, Indonesia

Species	D (ind/m^2)	RD (%)	D (ind./ha)	F	RF (%)	IVI (%)
A. aureum	1.41	12.75	14,074	0.48	13.68	26.44
A. catechu	0.26	2.35	2,593	0.11	3.16	5.51
A. conyzoides	2.07	18.79	20,741	0.56	15.79	34.58
Bambusa sp	0.11	1.01	1,111	0.07	2.11	3.11
C. dactylon	0.81	7.38	8,148	0.22	6.32	13.70
Calamus sp	0.48	4.36	4,815	0.15	4.21	8.57
G. linearis	0.78	7.05	7,778	0.26	7.37	14.42
I. cylindrica	0.33	3.02	3,333	0.11	3.16	6.18
M. malabathricum	2.07	18.79	20,741	0.70	20.00	38.79
M. pudica	1.33	12.08	13,333	0.33	9.47	21.55
P. betle	0.07	0.67	741	0.04	1.05	1.72
S. palustris	1.11	10.07	11,111	0.37	10.53	20.59
S. zalacca	0.04	0.34	370	0.04	1.05	1.39
S. androgynus	0.07	0.67	741	0.04	1.05	1.72
S. polyanthum	0.07	0.67	741	0.04	1.05	1.72
Total	**11.04**	**100.00**	**110,370**	**3.52**	**100.00**	**200.00**

Note: D (Density), RD (Relative Density), F (Frequency), RF (Relative Frequency), IVI (Importance Value Index)

Table 3. Quantitative structure of saplings in rubber agroforests in Southern Tempirai Village, North Penukal Sub-district, PALI District, South Sumatra, Indonesia

Species	D (ind/m^2)	RD (%)	D (ind./ha)	F	RF (%)	IVI (%)
H. brasiliensis	0.056	95	563	0.70	90.48	185.48
Coffea sp	0.003	5	30	0.07	9.52	14.52
Total	**0.059**	**100**	**593**	**0.77**	**100**	**200**

Note: D (Density), RD (Relative Density), F (Frequency), RF (Relative Frequency), IVI (Importance Value Index).

Table 4. Quantitative structure of trees in rubber agroforests in Southern Tempirai Village, North Penukal Sub-district, PALI District, South Sumatra, Indonesia

Species	D (ind/m^2)	RD (%)	D (ind./ha)	F	RF (%)	Do (m2/ha)	RDo	IVI
H. brasiliensis	0.015	100	148.15	0.78	100	1033	100.00	300.00

Note: D (Density), RD (Relative Density), F (Frequency), RF (Relative Frequency), Do (Dominance), RDo (Relative Dominance), IVI (Importance Value Index).

Discussion

Diversity and structure of plants in rubber agroforest

In this study, the highest plant species diversity in the rubber agroforests was found at the seedling level, in which the dominant species were *M. malabathricum*, *A. conyzoides*, *A. aureum*, *M. pudica*, and *S. palustris*. On the other hand, the lowest species diversity was found at the tree level, with only one species, *H. brasiliensis*. This is in accordance with the findings of the study by Tata et al. (2008), who found that species richness was quite large in RA at the seedling and sapling levels, while at the tree level, it was lower owing to the extensive use of wood by the community. *M. malabathricum* and *A. conyzoides* were the two most dominant species among the seedling varieties, which had the highest IVI with a density of more than 20,000 ind/ha. Meanwhile, *H. brasiliensis* was dominant at both the sapling and tree levels, each with a density of more than 550 ind/ha and trees of nearly 150 ind/ha. The spread of plant species in RA generally occurs through various intermediaries, i.e., animals (zoochory) and wind (anemochory), or without intermediaries (autochory) (Rasnovi 2006).

Table 5. Diversity index (H') of plants in rubber agroforests in Southern Tempirai Village, North Penukal Sub-district, PALI District, South Sumatra, Indonesia

Species	NI	Pi	log Pi	Pi log Pi
A. aureum	38	0.10	-1.00	-0.10
A. catechu	7	0.02	-1.73	-0.03
A. conyzoides	56	0.15	-0.83	-0.12
Bambusa sp.	3	0.01	-2.10	-0.02
C. dactylon	22	0.06	-1.24	-0.07
Calamus sp.	13	0.03	-1.46	-0.05
G. linearis	21	0.06	-1.26	-0.07
I. cylindrica	9	0.02	-1.62	-0.04
M. malabathricum	56	0.15	-0.83	-0.12
M. pudica	36	0.10	-1.02	-0.10
P. betle	2	0.01	-2.28	-0.01
S. palustris	30	0.08	-1.10	-0.09
S. zalacca	1	0.00	-2.58	-0.01
S. androgynus	2	0.01	-2.28	-0.01
S. polyanthum	2	0.01	-2.28	-0.01
H. brasiliensis	78	0.21	-0.69	-0.14
Coffea sp.	2	0.01	-2.28	-0.01
Total	378	0.79	-23.59	-0.85
H' = -∑ Pi log Pi =				**0.85**

Note: NI (Number of Individuals), Pi = NI of species/NI Total

Table 6. Ethnobotanical uses of plant species documented in rubber agroforests in Southern Tempirai Village, North Penukal Sub-district, PALI District, South Sumatra, Indonesia

Species	Habit	Parts used	Used for
M. pudica	Herb	Whole plant	Treatment of high blood pressure and insomnia.
M.malabathricum	Herb	Leaf	Drugs to prevent leucorrhea, relieve menstrual pain, launch menstruation and stop diarrhea.
Calamus sp.	Liana	Stem bud, stem	Stem bud (*umbut*): used as a seasoning for cooking and fresh vegetable. Stem: used to make furniture with high economic value, such as chairs, tables, cabinets and others.
G. linearis	Herb	Leaf	Treating headaches.
A. conyzoides	Herb	Leaf	Treating burns, bleeding, leprosy and other skin diseases.
P. betle	Liana	Leaf	Treating nosebleeds, leucorrhea, itching and sore eyes.
S. palustris	Herb	Leaf	Treating anemia and enhance the production of breast milk.
A. aureum	Herb	-	-
H. brasiliensis	Tree	Latex, stem	Latex: rubber raw material. Stem: used to make furniture such as chairs, tables and others.
Coffea sp	Tree	Fruit, leaf	Fruit: used as a drink of high economic value. Leaf: treating stomach ulcers.
C. dactylon	Herb	-	-
Bambusa sp.	Shrub	Stem bud, stem	Stem bud (*rebung*): used as a food ingredient (vegetables and snacks). Stem: used to make furniture such as woven mats, fish traps, rice baskets, and others.
S. zalacca	Shrub	Fruit	Eaten as fresh fruit and used as a medicine to stop diarrhea.
S. polyanthum	Tree	Leaf, fruit	Leaf: treat stomach aches, stop diarrhea, and lower high blood pressure. Fruit: eaten.
S. androgynus	Herb	Leaf, stem	Leaf and stem: besides being used as a vegetable, it is also useful as a medicine to increase the production of breast milk and anti-constipation.
I. cylindrica	Herb	Root	Root: shed urinary stones and treat fever.
A. catechu	Tree	Fruit, stem	Fruit: maintaining oral health, lowering high blood pressure, overcoming anemia, and increasing energy. Stem: making drains (gutters), and bridges, and for the celebration of the Indonesian Independence Day in the areca climbing competition.

Melastoma malabathricum is an invasive species that is generally adapted to grow in dry soil with poor nutrient conditions. This plant can also thrive in acidic soil conditions, slightly shaded by trees, and with the support of seed-dispersing animals as per the conditions observed at the RA research site. According to Master et al. (2020), this plant's invasion is supported by soil conditions that tend to be dry and contain high pyrite, no tree shade, and the help of seed-dispersing animals such as birds and weasels. In addition, *M. malabathricum* is able to inhibit the growth of plants in its immediate surroundings, such as grass by producing allelopathic compounds that can inhibit germination rates, as well as inhibit the growth of roots and shoots (Sarma et al. 2019).

Ageratum conyzoides is also an invasive plant that can disrupt the growth of cultivated and other plants (Huang et al. 2016). According to Negi et al. (2020), this plant extract contains phytochemical compounds which exhibit allelopathic effects and can inhibit the growth of rice plants by inhibiting seed germination and seedling growth. These plants can reduce native plant biomass by controlling space and resources, thereby disrupting the balance of structure and function of local ecosystems (Kaur et al. 2012).

Hevea brasiliensis was the dominant plant at the study site for the category of saplings and trees, although this plant was an introduced plant. This is observed when plants are deliberately introduced in large numbers and the local forest conditions are highly suitable for their growth. The dominance of this plant at the sapling level indicates its high regeneration potential. The research results of Tata et al. (2008) showed that this plant was dominant at the tree level in RA in Jambi Province, Indonesia.

Hevea brasiliensis can adapt and associate with native forest plants in the RA region so as to form a secondary forest resulting from cultivation. According to Michon (2005), one of the best examples of cultivated forests is the rubber agroforest system which is capable of maintaining highly productive forest regeneration. RA is a type of vegetation similar to a forest, which is greatest in the lowlands of Sumatra and is often called rubber forest (Gouyon et al. 1993; Beukema et al. 2007). However, the species diversity index (H') obtained in this research was found to be low (<1) with a total number of 17 species.

Ethnobotanical uses of plants in rubber agroforest

The diversity of plant species provides many ecosystem services for the lives of local people, such as protecting against natural disasters, supplying oxygen, providing aesthetic values, reducing the impact of global warming, and as a source of food, medicines and building materials (Table 6). Local community knowledge about the benefits of their surrounding ecosystem is the key to the bioprospecting of plants that are a source of food and medicines. The livelihoods and incomes of people in developing countries are currently highly dependent on wild plant products that contain beneficial chemical compounds that are available in a sustainable manner (Smith 2018; Shafi et al. 2021).

Most of the plant species obtained in this study are used by the community as medicines (about 70%) and a small proportion are used for foods, building materials, and materials for making household furniture (Tabel 6). Some of the diseases that can be treated with plants in RA are hypertension, insomnia, diarrhea, headaches, skin diseases, ulcers, urinary stones, fever, and anemia. Traditional communities generally use a lot of plants around them to treat various diseases (Qureshi et al. 2016) where around 80% of the world's population uses phytotherapy, especially in rural communities (Miraldi and Baini 2018; Hu et al. 2020), and many pharmaceutical industries use medicinal plants for the formulation of modern medicines (Awuchi and Godswill 2019).

Many wild plants contain active metabolites which act as antibiotics and anti-inflammatory compounds and are capable of controlling infections by microorganisms (i.e., bacteria, fungi, protozoa, and viruses) and inflammation. Various symptoms caused by infections and inflammation, such as diarrhea, fever, headaches, skin diseases, and wounds can be treated with wild plants, some of which were obtained in this study, such as *S. zalacca*, *A. conyzoides*, *G. linearis*, *M. malabathricum*, *S. polyanthum*, *P. betle,* and *I. cylindrica*. The emergence of bacteria that are resistant to antibiotics makes it difficult to treat infectious diseases (Alos 2015). It necessitates the search for new antibacterial agents in plant-derived natural compounds (Kokoska et al. 2019; Alvarez -Martinez et al. 2020). Similarly, anti-viral compounds are widely found in secondary metabolites of plants, including alkaloids, anthraquinones, coumarins, polyphenols, phenolic acids, lignans, naphthoquinones, peptides, nitrogenated compounds, polysaccharides, and terpenes (Lowe et al. 2021).

Besides being used for medicines, the plants obtained in this study are also used by the community as food, building materials, and materials for making household furniture. Plants used as food are *A. catechu*, *Calamus* sp., *S. zalacca*, *Coffea* sp., *S. androgynus*, *S. polyanthum*, *P. betle* and *Bambusa* sp, while those used as building materials and materials for making household furniture are *A. catechu*, *Calamus* sp., *H. brasiliensis*, and *Bambusa* sp. The parts of plants used as food are fruits, leaves, stems, and shoots, while those used as building materials and materials for making household furniture are stems. Communities in Southeast Asia generally obtain ecosystem services in the form of provisioning services, including food and raw materials (Panyadee et al. 2022). Food is very important, especially for the poor, rural communities, so wild food sources are urgently needed to support increased nutritional value and food security (Poppy et al. 2014; Punchay et al. 2020).

A total of 17 plant species consisting of 12 orders and 13 families were recorded at the rubber agroforests in Southern Tempirai Village, North Penukal Sub-district, PALI District, South Sumatra, with a species diversity index value that was classified as very low. *H. brasiliensis* was the dominant plant for trees and saplings, while *M. malabathricum* dominated the seedlings and understorey layer. The plant species obtained have various ethnobotanical roles, such as being used by the community for medicines, foods, and raw materials. *M. malabathricum*, *A. conyzoides*, *M. pudica* and *S. palustris* are the dominant plants that have ethnobotanical value as medicinal plants.

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