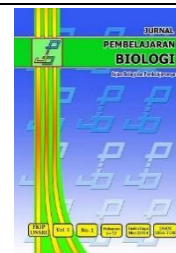


JPB 11(2) (2024)

Jurnal Pembelajaran Biologi: Kajian Biologi dan Pembelajarannya

<https://jpb.ejournal.unsri.ac.id/index.php/jpb/about>



Plant Species in The Environment of FKIP Unsri as A Learning Resource in Plant Morphology and Anatomy Practicum

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Article History:

Received: 07.10.2024

Accepted: 25.11.2024

Published: 04.12.2024

Keywords:

Learning resources,
plants, morphology,
anatomy,
identification.

Abstract: The environment as a learning resource has long been the object of research studies in various fields, especially plant morphology and anatomy. This study aims to determine the types of plants in the FKIP Unsri campus environment, which can be used as a learning resource in the practicum of Plant Morphology and Anatomy. The method used is descriptive. Plant data were collected by exploring techniques. The data obtained were identified and described based on morphological characters. The next step was to analyse the topics of morphology and plant anatomy practicum by referring to the identification results. The results showed that there were 114 species of seed plants belonging to 29 nations and 51 tribes, which could be used as learning resources in morphology practicum (100%) and plant anatomy (36%). Based on the analysis of practicum topics and plant availability, it is known that the campus environment provides 87.5% of plant morphology practicum materials and 81.3% of plant anatomy practicum materials. So it can be concluded that plants found in the FETT campus environment can be used as a learning resource for plant morphology and anatomy.

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ISSN: 2355-7192

E-ISSN: 2613-9936

Introduction

The utilisation of the environment as a learning resource is very important in the learning process, especially the utilisation of plants in the environment of students. Therefore, the study of the types of plants in a particular environment has long been an object of research in the field of botany. Variations in each type of plant, both in terms of morphology and plant anatomy can be used as a distinguishing thing for experts in classifying plants in certain groups (Wäldchen & Mäder, 2016). Plant identification is also carried out in various locations such as the school environment (Shofiyati, 2019), tourist attractions, campuses (Ulfa et al., 2023^b; Hartono, et al., 2020; Qomah et al., 2015) or around where students live (Ulfa et al., 2023^a). These studies were conducted with various objectives, such as knowing the type, diversity, abundance, benefits of these plants for the environment, as a first step for conservation or the benefits of plants as a learning resource.

The utilisation of plants as a learning resource has been carried out by several researchers at various levels of education, for example elementary school (Pebrina & Yuliani, 2021), secondary school (Eriawati, 2016) and even in universities (Nurlaeliana, 2022; Rahmawati, 2020). The results of his research show that utilising plants in the environment around students, such as the school environment or campus environment can improve students' activity, understanding and learning outcomes (Herawati et al., 2023; Pebrina & Yuliani, 2021; Rahmawati, 2020; Eriawati, 2016). Utilising the school environment as a learning resource can make students more focused and active in learning (Risafitri et al., 2024). Data from other studies show that students have difficulty recognising and identifying plants around campus in the structure and function of plant tissues course (Liunokas & Billlik, 2021). This is due to the lack of information about the diversity of plant species around students. So it can be concluded that the identification and utilisation of plant species

in the campus environment as a learning resource is an important thing to do, especially for learning resources for plant morphology and anatomy.

Identifying and utilising plants around the campus environment in learning plant morphology, allows students to have a more interesting hands-on experience (Rahmawati, 2020), and is effective in the teaching and learning process. Liunokas & Billik, (2021), state that teaching materials based on plants around campus can improve students' identification skills of plant species. In addition, several studies have shown that the use of the surrounding environment in the learning process can improve student learning outcomes (Herawati et al., 2023). Learning that involves direct observation and field experiments has the potential to improve students' practical skills (Hamdani, et al., 2019), such as the ability to identify plant species, use microscopes to observe the structure of plant cells and tissues, and the ability to analyse data obtained during practicum. Using the campus environment as a learning resource not only improves conceptual understanding, but also technical skills in botany. Direct observation in learning will be able to increase deeper understanding for students compared to only learning theoretical learning or observing images in textbooks. Apart from being a learning resource, plant identification activities in the campus environment can also contribute to efforts to conserve and manage plants on campus. Through this activity, the campus can obtain more complete information about the types of plants on campus, including their rarity or vulnerability status, so that more appropriate conservation measures can be taken.

Various studies on plant identification and utilising the campus environment in learning have been conducted. However, studies on the types of plants in the FKIP Unsri campus environment and how to use these plants as a learning resource in plant morphology and anatomy practicum have never been done before. Therefore, the focus of this article is to identify the types of plants around the campus of FKIP Unsri that can be used as a learning resource in the practicum of plant morphology and anatomy. The use of the FKIP Unsri campus environment, because the campus environment has a very diverse plant and has never been studied before. Related to learning plant morphology and anatomy, the use of plants around the campus environment can be used as a means of contextual learning. Plant morphology is related to the shape and external structure of plants, such as the morphology of roots, stems, leaves, flowers, and fruits and seeds, while plant anatomy is related to the inner structure of plants, such as cells and tissues contained in each plant organ (Ermayanti et al., 2018; Ermayanti et al., 2018). These diverse plant species allow students to learn morphology and anatomy with concrete examples. In addition, the subject matter that is adapted to the surrounding environment of students can be an effective model to enhance learning experiences that are relevant, interesting, and applicable.

The results of this study are expected to be the main learning resource in the morphology and anatomy of plants. In addition, the results of the study are expected to be used as a basis for efforts to preserve the types of plants around the FKIP campus. The results of this study are expected to be basic data in the development of environment-based learning, especially the campus environment.

Method

The research was conducted in April-October 2023 in the campus of the Faculty of Teacher Training and Education, Sriwijaya University, Indralaya. The plants identified were plants that grow throughout the Faculty of Teacher Training and Education area. The research method is descriptive method. Data collection was carried out with the cruising method (*crushing method*). The research was divided into two stages, namely the pre-research and data collection stages. In the pre-research stage, literature study, location survey, and preparation of tools and materials were conducted. The data collection stage was carried out with four activities, namely, observation, recording morphological characters, documentation, and sample identification. Exploration of the area around the campus starts from the area around the Dean's building, lecture buildings A, B, C and D, and the Botany Laboratory. Every plant found was observed, recorded, and identified. The identification process was carried out by observing the morphological characters of plants found and adjusting the results of observations with relevant reference sources, for example *Flora of Java (Spermatophytes only)* by (Backer & Brink, 1963). . Furthermore, determination was carried out with existing specimens.

The Gymnospermae (Pinophyta) plant classification system refers to Cronquist, Takhtajan, and Zimmerman, while Angiospermae (Magnoliophyta) plants use the Cronquist classification system. Literature for identification used several sources such as the book *Flora of Java (Spermatophytes only)* by Backer & Brink, by Backer & Brink, (1963, 1965, 1968), and relevant journal articles. The next stage is to analyse the topics of practicum of plant morphology and anatomy with reference to the results of identification. Analysis is done by giving a *check list* on plants that can be used as a representative example or as a practicum material of plant morphology and anatomy. Furthermore, calculate the percentage of the number of plants that can be utilised for practicum activities.

Result

The results showed that there are 114 species of seed plants belonging to 29 nations and 51 tribes, which can be used as learning resources in learning plant morphology and anatomy.

Plant species in FKIP Unsri environment

Nation	Tribe	Scientific Name	Common Name	Learning Resources	
Cycadales	Cycadaceae	<i>Cycas rumphii</i> Miq.	Pakis Haji	Morphology & Anatomy	
Gnetales	Gnetaceae	<i>Gnetum gnemon</i> L.	Melinjo	Morphology & anatomy	
Magnoliales	Annonaceae	<i>Annona muricata</i> L.	Soursop	Morphology & Anatomy	
		<i>Polyalthia longifolia</i> (Sonn.) Thwaites	Glodokan	Morphology	
Laurales	Lauraceae	<i>Persea americana</i> P. Mill.	Avocado	Morphology & Anatomy	
Urticales	Moraceae	<i>Artocarpus heterophyllus</i> Lam.	Jackfruit	Morphology & Anatomy	
		<i>Artocarpus integer</i> (Thunb.) Merr.	Cempedak	Morphology & Anatomy	
		<i>Ficus benjamina</i> L.	Banyan	Morphology & Anatomy	
Caryophyllales	Nyctaginaceae	<i>Bougainvillea spectabilis</i> Willd.	Paper Flower	Morphology	
	Cactaceae	<i>Nopalea cochenillifera</i> (L.) Salm-Dyck	Centong Cactus	Morphology & Anatomy	
	Amaranthaceae	<i>Afernanthera brasiliiana</i> (L.) Kuntze	Red Spinach	Morphology & Anatomy	
Dilleniales	Dilleniaceae	<i>Dillenia ovata</i> Wall. ex Hook.f. & Thomson	Simpur	Morphology & Anatomy	
Theales	Theaceae	<i>Schima wallichii</i> Choisy	Puspa/Seru	Morphology & Anatomy	
	Clusiaceae	<i>Garcinia mangostana</i> L.	Mangosteen	Morphology & Anatomy	
	Malvaceae	<i>Hibiscus rosa-sinensis</i> L.	Hibiscus	Morphology & Anatomy	
		<i>Durio zibethinus</i>	Durian	Morphology & Anatomy	
	Elaeocarpaceae	<i>Muntingia calabura</i> L.	Kersen	Morphology	
Ebenales	Sterculiaceae	<i>Theobroma cacao</i> L.	Chocolate	Morphology	
	Sapotaceae	<i>Manilkara zapota</i> (L.) P.Royen	Sawo	Morphology & Anatomy	
		<i>Mimusops elengi</i> L.	Cape	Morphology	
Fabales	Fabaceae	<i>Acacia auriculiformis</i> Benth.	Acacia Aurikula	Morphology	
		<i>Acacia mangium</i> Willd.	Acacia	Morphology	
		<i>Mimosa pudica</i> L.	Princess Shame	Morphology	
		<i>Caesalpinia pulcherrima</i> (L.) Sw.	Peacock flower	Morphology	
		<i>Delonix regia</i> (Hook.) Raf.	Flamboyant	Morphology	
		<i>Pterocarpus indicus</i> Willd.	Angsana	Morphology	
Myrtales	Myrtaceae	<i>Psidium guajava</i> L.	Guava	Morphology	
		<i>Syzygium aqueum</i> (Burm.f.) Alston	Water Guava	Morphology	
		<i>Syzygium malaccense</i> (L.) Merr. & L.M.Perry	Guava Bol	Morphology	
		<i>Syzygium myrtifolium</i> Walp.	Red Shoots	Morphology & anatomy	
	Melastomaceae	<i>Melastoma malabathricum</i> L.	Senduduk	Morphology & anatomy	
	Combretaceae	<i>Terminalia catappa</i> L.	Ketapang	Morphology & anatomy	
		<i>Terminalia mantaly</i> H.Perrier	Ketapang kencana	Morphology & Anatomy	
	Cornales	Cornaceae	<i>Cornus</i> sp.	Kousa 'Summer Fun'	Morphology
	Euphorbiales	Euphorbiaceae	<i>Acalypha siamensis</i> Oliv. ex Gage	tea-tehan	Morphology
			<i>Aporosa octandra</i> (Buch.-Ham. ex D.Don) Vickery	Pelangas	Morphology
<i>Codiaeum variegatum</i> (L.) Rumph. ex A.Juss.			Puring	Morphology	
<i>Euphorbia tirucalli</i> L.			Bone Fracture	Morphology & Anatomy	
<i>Excoecaria cochinchinensis</i> Lour.			Sambang Darah	Morphology	

Nation	Tribe	Scientific Name	Common Name	Learning Resources
		<i>Hevea brasiliensis</i> (Willd. ex A.Juss.) Mull.Arg.	Rubber	Morphology & Anatomy
		<i>Jatropha curcas</i> L.	Distance	Morphology & Anatomy
		<i>Jatropha integerrima</i> Jacq.	Batavia	Morphology
		<i>Mallotus apelta</i> (Lour.) Mull.Arg.	Behind the Wind	Morphology & anatomy
Sapindales	Sapindaceae	<i>Euphoria longan</i> (Lour.) Steud.	Longan	Morphology & Anatomy
		<i>Nephelium lappaceum</i> L.	Rambutan	Morphology & Anatomy
		<i>Pometia pinnata</i> J.R.&G.Forst	Matoa	Morphology
	Anacardiaceae	<i>Anacardium occidentale</i> L.	Cashew	Morphology & Anatomy
		<i>Mangifera indica</i> L.	Mango	Morphology & Anatomy
		<i>Spondias dulcis</i> Parkinson's	Kedondong	Morphology & Anatomy
	Meliaceae	<i>Lansium domesticum</i> Correa	Duku	Morphology & Anatomy
		<i>Swietenia mahagoni</i> (L.) Jacq.	Mahogany	Morphology & Anatomy
	Rutaceae	<i>Euodia suaveolens</i> var. <i>ridleyi</i> (Hochr.) Bakh. f.	Yellow Broccoli	Morphology
		<i>Murraya koenigii</i> (L.) Spreng.	Kari	Morphology
Geraniales	Oxalidaceae	<i>Averrhoa blimbi</i> L.	Belimbing Wuluh	Morphology & Anatomy
		<i>Averrhoa carambola</i> L.	Starfruit	Morphology & Anatomy
Apiales	Araliaceae	<i>Polyscias filicifolia</i> (C.Moore ex E.Fourn.) L.H.Bailey	Cikra-cikri	Morphology
		<i>Polyscias guilfoylei</i> (W.Bull) L.H.Bailey	Wild Coffee	Morphology & Anatomy
		<i>Schefflera arboricola</i> (Hayata) Merr.	Walisongo Small Leaf	Morphology
Gentianales	Gentianaceae	<i>Fagraea fragrans</i> Roxb.	Tembesu	Morphology
	Apocynaceae	<i>Allamanda cathartica</i> L.	Alamanda	Morphology
		<i>Alstonia scholaris</i> (L.) R. Br.	Pulai	Morphology & Anatomy
		<i>Plumeria alba</i> L.	Cambodia Bali	Morphology
		<i>Plumeria rubra</i> L.	Cambodia	Morphology
		<i>Tabernaemontana corymbosa</i> Roxb. ex Wall.	Rombusa Mini	Morphology
		<i>Wrightia antidysenterica</i> (L.) R.Br.	Jasmine Paste	Morphology
		<i>Wrightia pubescens</i> R.Br.	Mentaos tree	Morphology
Solanales	Solanaceae	<i>Capsicum annuum</i> var. <i>annuum</i>	Cayenne Pepper	Morphology
Lamiales	Boraginaceae	<i>Ehretia microphylla</i> Lam.	Drawstring Fence	Morphology
	Verbenaceae	<i>Duranta erecta</i> L.	Duranta	Morphology
		<i>Lantana camara</i> L.	Chicken Mole	Morphology
		<i>Peronema canescens</i> Jack.	Sungkai	Morphology & Anatomy
		<i>Tectona grandis</i> L.f.	Teak	Morphology & Anatomy
	Lamiaceae	<i>Vitex pinnata</i> L.	Laban	Morphology
Scrophulariales	Acanthaceae	<i>Asystasia gangetica</i> (L.) T.Anderson	Israeli grass	Morphology
	Oleaceae	<i>Ligustrum sinense</i> Lour.	Chinese Privet	Morphology
Rubiales	Rubiaceae	<i>Coffea arabica</i> L.	Coffee	Morphology
		<i>Ixora coccinea</i> L.	Asoka	Morphology
		<i>Morinda citrifolia</i> L.	Noni	Morphology
		<i>Richardia brasiliensis</i> Gomes	Goletrak	Morphology
Asterales	Asteraceae	<i>Ageratum conyzoides</i> (L.) L.	Bandotan	Morphology
		<i>Chromolaena odorata</i> (L.) R.M.King & H.Rob.	Tekelan	Morphology
Arecales	Arecaceae	<i>Adonidia merrillii</i> (Becc.) Becc.	Christmas palm	Morphology
		<i>Cocos nucifera</i> L.	Coconut	Morphology
		<i>Elaeis guineensis</i> Jacq.	Oil Palm	Morphology & Anatomy
		<i>Hyophorbe lagenicaulis</i> (L.H.Bailey) H.E.Moore	Bottle Palm	Morphology
		<i>Phoenix dactylifera</i> L.	Dates	Morphology

Nation	Tribe	Scientific Name	Common Name	Learning Resources
Arales	Araceae	<i>Wodyetia bifurcata</i> A.K. <i>Irvine</i>	Squirrel Tail Palm	Morphology
		<i>Caladium bicolor</i> (Aiton) Vent.	Coloured Caladium	Morphology & Anatomy
		<i>Dieffenbachia seguine</i> (Jacq.) Schott	Happy Leaves	Morphology
		<i>Homalomena rubescens</i> (Roxb.) Kunth	Nampu	Morphology
		<i>Monstera molinae</i> Croat & Grayum	Monstera	Morphology
		<i>Philodendron</i> <i>bipinnatifidum</i> Schott ex Endl.	Philo Jari	Morphology
		<i>Syngonium podophyllum</i> Schott	Arrowheads	Morphology
Commelinales	Commelinaceae	<i>Tradescantia spathacea</i> Sw.	Adam Eve	Morphology & Anatomy
Poales	Poaceae	<i>Bambusa multiplex</i> (Lour.) Raeusch. ex Schult.	Bamboo Fence	Morphology
		<i>Cenchrus polystachios</i> (L.) Morrone	Thatch	Morphology
		<i>Gigantochloa atrovioleacea</i> Widjaja	Black Bamboo	Morphology
		<i>Imperata cylindrica</i> (L.) Raeusch.	Thatch	Morphology
Bromeliales	Bromeliaceae	<i>Vriesea imperialis</i> Carriere	Giant Bromelia	Morphology
Zingiberales	Heliconiaceae	<i>Heliconia psittacorum</i> L.f.	Supif Udang	Morphology
		<i>Heliconia spathocircinata</i> Aristeg.	Lobster Claws	Morphology
	Musaceae	<i>Musa x paradisiaca</i> L.	Bananas	Morphology
	Costaceae	<i>Costus woodsonii</i> Mass	Pacing Pentu	Morphology
	Zingiberaceae	<i>Effingera hemisphaerica</i> (Blume) R.M.Sm.	Honje Forest	Morphology
	Marantaceae	<i>Calathea ornata</i> (Linden) Korn.	Calathea Striped Pin	Morphology
Liales	Asparagaceae	<i>Nolina longifolia</i> (Karw. ex Schult. & Schult.f.) Hemsl.	Mexican Grass Tree	Morphology
		<i>Yucca aloifolia</i> L.	Dagger Plant	Morphology
	Agavaceae	<i>Agave desmettiana</i> Jacobi		Morphology
		<i>Agave vivipara</i> L.	Caribbean Agave	Morphology
		<i>Dracaena angustifolia</i> (Medik.) Roxb.	Suji	Morphology & Anatomy
		<i>Dracaena surculosa</i> Lindl.	Japanese Bamboo	Morphology & Anatomy
		<i>Sansevieria cylindrica</i> Bojer ex Hook.	Genie's tongue	Morphology
	Dioscoreaceae	<i>Dioscorea alata</i> L.	Coconut Tuber	Morphology
	Liliaceae	<i>Cordyline fruticosa</i> (L.) A.Chev.	Hanjuang	Morphology & Anatomy

Based on Table 1, it is known that there are 114 species of seed plants belonging to 29 nations and 51 tribes, which can be used as learning resources in the practicum of plant morphology and anatomy. Plants that were successfully identified were in two divisions namely Gymnospermae (Pinophyta) and Angiospermae (Magnoliophyta). Plants around the campus of FKIP Unsri are dominated by the Angiospermae Division (Magnoliophyta), with the highest number of species in the Sapindales nation, namely 10 species. Sapindales nation is the most abundant in the campus environment, especially in the Botanical garden area, because FETT has an "Education Park" around which fruit plants have been planted, which are most of the plant species included in the Sapindales nation.

Based on the analysis of the materials needed in each morphology and plant practicum topic, it is known that all (100%) plants found can be used for learning plant morphology practicum and 36% of existing plants can be used as learning resources for plant anatomy practicum (Table 1). However, all existing plants do not fully complement the materials for all practicum topics. In plant morphology, it is known that 87.5% of plant morphology practicum materials are available in the campus environment, but 12.5% of materials for practicum are not available in the campus environment, namely related to the topic of fruit and seeds. While for plant anatomy practicum materials, 81.3%, plant anatomy practicum materials are available in the campus environment and 18.3% of practicum materials are not available in the campus environment, namely related to the topic of sclereid tissue, fruit and seed anatomy.

Data on plant species is basic information that is very useful for contextual learning, especially for plant morphology and anatomy. In addition, this information can be used as a basis for determining conservation

efforts or conservation strategies. The seed plant inventory activities carried out around the FETT campus are expected to support the FETT campus to become a centre for conservation and education.

Discussion

Based on the results of observations, it is known that the plants that were successfully identified belong to the Gymnospermae (Pinophyta) and Angiospermae (Magnoliophyta) divisions. Angiospermae (Magnoliophyta) division, is the most common division found. Based on previous literature review, it is known that the diversity of Angiospermae plants is very high with 300,000 plant species in the world. (The Gymnosperm Database, 2024).. In addition, the Angiospermae group has a higher ability to adapt to the environment than Gymnosperms. Plants belonging to this division generally have a higher survival rate even in soils that contain limited nutrients (Piper et al., 2019). (Piper et al., 2019). These results are supported by findings from several sources stating that the Gymnospermae group has few species in the world, which are approximately 1,000 plant species (Christenhusz et al., 2019). (Christenhusz et al., 2011; The Gymnosperm Database, 2024; Yang et al., 2017).. In addition, some species experienced extinction during the Cenozoic period (Crisp & Cook, 2011).. In the FETP environment, the nation with the highest number of species was also found, namely Sapindales, namely 10 species, because several species of this group are plants that are deliberately planted, especially in the Botanical garden area.

Plants found around the campus of FKIP Sriwijaya University are very diverse. Some of the plants found are plants that grow freely around the campus environment, such as Seru (*Schima wallichii* Choisy), Pulai (*Alstonia scholaris* (L.) R. Br.), Tembesu *Fagraea fragrans* Roxb.), Angsana (*Pterocarpus indicus* Willd.) and several other plants. These plants are deliberately retained because they function as protectors, because they have broad crowns. These plants have distinctive morphological characters in the form of long and wide crowns, dense leaves, large, tall, and sturdy stems. Some plants are deliberately planted, namely fruit plants and ornamental plants. Fruit plants found include Durian (*Durio zibethinus*), Mangosteen (*Garcinia mangostana* L.), Water guava (*Syzygium aqueum* (Burm.f.) Alston), Cashew (*Anacardium occidentale* L.), longan *Euphoria longan* (Lour.) Steud.), Mango (*Mangifera indica* L.), Avocado (*Persea americana* P. Mill.) and others. These plants are deliberately planted especially around the education park as a means of education and tourism in the campus environment. While ornamental plants such as Hajj fern (*Cycas rumphii* Miq.), Paper Flower (*Bougainvillea spectabilis* Willd.), Cactus (*Nopalea cochenillifera* (L.) Salm-Dyck.), *Hibiscus* (*Hibiscus rosa-sinensis* L.) and others, are used to beautify and beautify the campus environment.

All plants that have been identified (100%) can be used as learning resources in plant morphology practicum. This is because, in plant morphology practicum activities, students are given the freedom to find plant species and observe the morphological characteristics of each organ ranging from roots, stems, leaves, flowers fruits and seeds. The more examples of plant organs that are observed, the better the students' conceptualisation. Regarding the availability of materials needed for each topic, the campus environment has provided 87.5% of morphological practicum materials for root, stem, leaf, and flower morphology. The utilisation of these plants in practicum activities is very diverse, for example for the topic of flowers (observation of the protective leaves of flowers), plants belonging to the Araceae tribe or taro-talasan can be used, which are plants with spadical inflorescences and protected by spatha. Plants from Araceae are generally ornamental plants around campus. Besides its potential as an ornamental plant because it has a beautiful morphology, the Araceae plant is also an ornamental plant. (Hutasuhut, 2020; Irsyam et al., 2021; Novia et al., 2023).several sources mention that one of the uniqueness of this tribe is the presence of protective leaves on the inflorescence called spatha (Coté, 2009; Hutia et al., 2023). (Coté, 2009; Hutasuhut, 2020; Vaidya, 2016). For the observation of flower parts, plants in the Malvaceae tribe can be used, for example *Hibiscus rosa-sinensis* L, which has complete flower parts ranging from flower stalks, petals, corollas, pollen and pistils. Some sources mention *Hibiscus rosa-sinensis* L. as a representative example to learn about flowers. For learning resources on leaf morphology, various types of plant leaves can be used, such as mango leaves for examples of single leaves and star fruit leaves for examples of compound leaves. 12.5% of practicum materials are not available in the campus environment, namely related to the topic of fruit and seeds. This is because the plants around campus are not yet fruitful, and most of the fruits used in practicum activities are not available in the campus environment, for example apples, Chinese Petai, tomatoes, bananas and others. Some types of dried fruit are found around campus such as angšana fruit, peacock flower fruit, and acacia, but wet and fleshy fruits such as apples, tomatoes, pumpkins are not found in the campus environment.

In plant anatomy, only 36% of existing plants can be used as learning resources for plant anatomy practicum (Table 1). However, if it is associated with the materials needed in each practicum topic, then the campus environment has provided 81.3%, practicum materials for plant anatomy. Observation of plant anatomy using a microscope, does not allow all samples of plant organs to be observed. Selection of appropriate plant samples will facilitate students in making preparations, finding the right tissue and understanding its characteristics correctly. So the criteria for selecting plant species for plant anatomy observations are plants that really represent observations on one topic. For example, for the observation of

epidermis and its derivatives, leaves of Senduduk (*Melastoma malabathricum* L.) and Durian (*Durio zibethinus*) can be used. In addition to the observation of epidermal cells, the rough leaf surface allows for the observation of trichomes. Meanwhile, for the observation of rapida crystals, the stem of Suji pandanus (*Dracaena angustifolia* (Medik.) Roxb.) can be used. Although in terms of anatomical structure studies, all of these plants can be used in practical activities, technically the materials used for microscope observations must be truly representative. Therefore, in some topics such as the observation of parenchyma cells that function as food reserves storage, apples, pumpkins and potato tubers are used. Based on this, 18.3% of practicum materials are not available in the campus environment, namely related to sclereid tissue, fruit and seed anatomy.

The selection of plants that can be used as learning resources, not only based on the suitability of plant characteristics with the topics taught, but also based on several things, namely: plants are easily accessible to students and there are in abundance in the environment. Existing plants also have a lot of variation, for example for observations of leaf morphology, in the environment there are various shapes, leaf shapes, colours, and textures. In addition, the plants used are also plants that are safe for students, not potentially causing allergies or even toxic. Based on these considerations, plants in the environment of FKIP Unsri can be used as a learning resource on plant morphology and anatomy.

It is hoped that the results of this study can become basic data in developing environment-based learning, especially the campus environment. Data on existing plant species are also expected to be studied further so that they can bring greater benefits in learning.

Conclusion

Plants in the FKIP campus of Sriwijaya University are very diverse, consisting of 114 species of seed plants classified into 29 nations and 51 tribes. These plants can be used as learning resources in morphology and plant anatomy practicum. Based on the results of the analysis showed that the campus environment can provide 87.5% of practicum materials for plant morphology 81.3%, plant anatomy practicum materials. The types of plants found in the FETT environment can be used as learning materials for contextual learning in plant morphology and anatomy. The results of this study are expected to be basic data in the development of environment-based learning, especially the campus environment. Further research is expected to examine more broadly the diversity and benefits of plants in the campus environment, and not only limited to flowering plants.

Acknowledgment

This research data is part of a competitive grant from Sriwijaya University in 2023. SP DIPA-023.17.2.677515/2023, dated 30 November 2022.

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