



Inventory of Plant Types of The Arecaceae Family in Campus I UIN Sunan Gunung Djati Bandung

Nursyafira Asma Humairah¹, Nursyifa Firda Prasetyanti², Ateng Supriyatna³

^{1, 2, 3} Department of Biology, Faculty of Science and Technology UIN Sunan Gunung Djati

ABSTRACT

Abstract: *The Arecaceae family is a palm plant that is widely used as an ornamental plant. Indonesia is one of the centers of high diversity of Arecaceae species. This family is called a multipurpose plant because it has various benefits for human life such as a source of food, oil producer, medicine, handicraft and household materials, ornamental plants and environmental conservation plants. The purpose of this research was to inventory the types of plants belonging to the Arecaceae family. The research was conducted at Campus I UIN Sunan Gunung Djati Bandung which was divided into two locations using the observation method. The results showed that there were several types of Arecaceae plants in the area of UIN Sunan Gunung Djati Campus I, namely Adonidia merrillii, Cyrtostachys renda, Dypsis lutescens.*

Keywords: Inventory, Arecaceae, Palm Plants

Abstrak: *Famili Arecaceae merupakan tumbuhan palem-paleman yang banyak dijadikan tanaman hias. Indonesia menjadi salah satu pusat tingginya keanekaragaman jenis Arecaceae. Famili ini dijuluki sebagai tumbuhan serbaguna sebab memiliki manfaat yang bervariasi bagi kehidupan manusia seperti sebagai sumber pangan, penghasil minyak, obat-obatan, bahan kerajinan dan rumah tangga, tanaman hias serta tanaman konservasi lingkungan. Tujuan penelitian ini dilakukan adalah untuk menginventarisasi jenis-jenis tumbuhan yang termasuk ke dalam famili Arecaceae. penelitian telah dilakukan di Kampus I UIN Sunan Gunung Djati Bandung yang dibagi menjadi dua lokasi dengan menggunakan metode observasi. Hasil penelitian menunjukkan terdapat beberapa jenis tumbuhan Arecaceae pada Kawasan UIN Sunan Gunung Djati Bandung Kampus I yaitu Adonidia merrillii, Cyrtostachys renda, Dypsis lutescens.*

Kata Kunci: Inventarisasi, Arecaceae, Tumbuhan Palem



Introduction

Indonesia as a country with high biodiversity is known to have genetic diversity, species to ecosystems on land and water. Biodiversity in this country is ranked second in the world based on data from the Indonesian Institute of Sciences (LIPI) for 2022. Hartini (2005) states that there are 477 species of palms in Indonesia and 225 of them are endemic. *Areaceae*, also known as palms, is a family of plants from the order *Arecales*. This family is called a multipurpose plant because it has various benefits for human life such as a source of food, oil producer, medicine, handicraft and household materials, ornamental plants and environmental conservation plants. According to Corner (1996), the *Areaceae* family is the oldest family among other flowering plant families. This statement is reinforced by the findings of fossils from members of the *Areaceae* family in the Cretaceous era 120 million years ago.

Areaceae need light to carry out the growth process. *Areaceae* can grow on plains, hills, to steep slopes with an average temperature of 25-170°C (Astuti, 2012). Based on the number of seed pieces, the *Areaceae* family belongs to the monocotyledon group, which is one piece. The stem height of its members is known to reach 50 meters (Astuti, 2016). According to Jihad (2012) *Areaceae* are not always trees but can be climbing plants. *Areaceae* has a general characteristic, namely segmented stems without a true cambium which can be single stems or clumps, the leaves are compound leaves with leaf sheaths that wrap around the stems. There are species with stems vines on other trees or known as lianas where other plants will be used as climbing to live. The species in question are *Hyphaene* and *Dypsis*. In addition, Hutasuhut & Rasyidah (2018) explained that *Areaceae* has variations in stem height, where a trunk with a height of 100 meters is a tree, 2-10 meters is a medium tree, and less than 2 meters is a bush.

In tropical and subtropical areas around 200-300 *Areaceae* tribes are spread with a number of species of around 2000-3000 species. The number of these species can still increase because of the possibility that large areas have not been inventoried. Various types of *Areaceae* have many kinds of benefits, one of which is road ornamental plants or plants (Hitasuhut & Rasyidah, 2018). Palm species (*Areaceae*) in Indonesia have high species diversity, so that Indonesia is the center of *Areaceae* species diversity (Wahyudi et al., 2014).

Based on the introduction, it can be seen that this study aims to identify and inventory the types of *Areaceae* plants in the Campus I area of UIN Sunan Gunung Djati Bandung. The research will produce inventory data for *Areaceae* plants which are expected to provide information and input for conservation efforts for researchers.

Materials and Methods

This research was conducted in June 2023 at Campus I of the Sunan Gunung Djati State Islamic University Bandung, Cipadung District, Bandung City, West Java. This study used direct observation methods to research locations in depth and then poured it into a descriptive form. Plants were identified morphologically, then carried out a literature review and linkages with existing specimens. The research was carried out using several tools and materials including stationery, paper, cell phone camera, and several plant species that were observed. The sample observations were carried out using the roaming technique, namely by exploring the area of campus I UIN Sunan Gunung Djati Bandung. The observation locations were divided into two, namely Location 1 which was located around the Faculty of Science and Technology, and Location 2 which was located around the Faculty of Political Science.

Results and Discussion

Based on research conducted in the Campus I area of UIN Sunan Gunung Djati Bandung, the number of *Arecaceae* obtained was three species. The determination of the species was carried out through a literature study. The results of the research that has been done are presented in table form as follows:

Tabel 1. Classification of *Arecaceae* species in the Campus I UIN Sunan Gunung Djati Bandung

Class	Ordo	Family	Genus	Species
<i>Liliopsida</i>	<i>Arecales</i>	<i>Arecaceae</i>	<i>Adonidia</i>	<i>Adonidia merrillii</i>
<i>Liliopsida</i>	<i>Arecales</i>	<i>Arecaceae</i>	<i>Cyrtostachys</i>	<i>Cyrtostachys renda</i>
<i>Liliopsida</i>	<i>Arecales</i>	<i>Arecaceae</i>	<i>Dypsis</i>	<i>Dypsis lutescens</i>

Table 2. Species name, local name, number of individuals and picture.

No.	Species name	Local name	Number of individuals	Picture
1.	<i>Adonidia merrillii</i>	Palem putri	26 individuals	 Figure 1. <i>Adonidia merrillii</i> (Personal doc., 2023)
2.	<i>Cyrtostachys renda</i>	Red palm (Palem Merah)	4 individuals	 Figure 2. <i>Cyrtostachys renda</i> (Personal doc., 2023)
3.	<i>Dypsis lutescens</i>	Yellow palm (Palem Kuning)	8 individuals	 Figure 3. <i>Dypsis lutescens</i> (Personal doc., 2023)



Based on Table 1. it is known that the type of *Arecaceae* obtained from identification results there are three species. As for the types of *Arecaceae* plant in this study namely *Adonidia merrillii*, *Cyrtostachys lace*, and *Dypsis lutescens*. *Adonidia merrillii* species has the most number of individuals that can be seen in Table 2. There are 26 individuals, as many as 13 individuals in Location 1 and 13 individuals in Location 2. The types that is the least is *Cyrtostachys renda* which is only found in Location 2 with a total of 4 individuals. Then *Dypsis lutescens* was found as many as 8 individuals so that the total *Arecaceae* plants found in Locations 1 and 2 as many as 38 individuals.

Based on the literature study that three species that have been found is a Liliopsida class that have the same root type that is fibrous root system. Based on morphological observations, *Adonidia merrillii* is known to have stems wood that is above the ground with a straight growth direction. The stem is round and unbranched. *Adonidia merrillii*'s leaves is a rosette of stems with leaf types pinnate compound with a thin texture and stiff. Build owned leaves sword-shaped with leaf edges and flat leaf base. *Adonidia merrillii* leaf tips tapered. It bears resemblance to a king palm (palem raja), but the leaves that *Adonidia* have are larger and more green. The uses of this plant are many used as a roadside decoration or in a pot.

Cyrtostachys renda represents plants with stems and leaves the leaves are red so called by local people as red palm. This species also has a name as *Cyrtostachys lakka*. Based on morphological observation, It has pinnate compound leaves flat-edged linear shape. End of the leaves are pointed (acutus), boned leaves parallel and blunt leaf base. The stems are clustered like a rosette, slim, not too big, and growing straight up (Fitrianti et al., 2022). Red palm plants are often used ornamental plants for the community because its beauty. This plant can not consumed.

Dypsis lutescens or as it is known with a yellow palm is a plant well-known as decoration. According to Ramadhani et al (2019) possibility growing of *Dypsis lutescens* reaches 6 meters. Soil suitable for palms yellow is damp earth and soil slightly acidic sand. Based on process of observing this plant placed in a pot of size large enough. Research gets results which shows that this plant compound leaf. End of the leaves and the base of the leaves of this plant pointed (acute). Build a leaf shape lanceolatus with parallel veins and flat leaf edges. This plant has a single stem and does not branched.



Campus I UIN Sunan Gunung Djati Bandung is located at the coordinates - 6.9321239 south latitude 107.7167845 east longitude. It is located in Cibiru District, Bandung, West Java which has a range temperature between 19-29°C. The campus has a tropical climate with ample rainfall tall. Based on direct observation abiotic factors at Location 1 precisely at Faculty of Science and Technology, conditions of the soil host to the species *Adonidia merrillii* grow is good quality with a dark brown color and clay texture.

While at Location 2, Faculty of Politics Science the soil where this species grows drier by comparison soil at Location 1. *Cyrtostachys renda* and *Dypsis lutescens* are grown on in a pot with clay. Light of the sun can also have an effect where did the three species grow suitable for this family to grow.

The growth of the family *Arecaceae* requires to the environmenal conditions such as soil and climate. The climate that suitable for this family to grow is a climate with rainfall evenly throughout the year. Whereas soil type that suitable for this plant are dry land, soil sand, and clay. This type of plant known to grow in a wide variety of conditions and locations as in mountain, plains, along rivers, even on the shoreline (Jihad, 2012). Therefore, it is not suprised if *Arecaceae* can grow on Campus I UIN Sunan Gunung Djati Bandung.

CONCLUSION

Based on the results of observations that has been done, family *Arecaceae* that located on Campus I UIN Sunan Gunung Djati Bandung is as much three species for a total of 38 individuals. The three species are *Adonidia merrillii*, *Cyrtostachys renda* and *Dypsis lutescens*. The most species found is *Adonidiamerrillii* as much 26 individuals adn the least one is *Cyrtostachys renda* with 4 individuals. The most valued abiotic factors that affect this family growth is climate encompassing temperature, sunlight and rainfall as well as soil quality.

AUTHOR'S CONTRIBUTION

N.A.H and N.F.P designed, collected and analyzed data, and wrote the component articles.

THANK-YOU NOTE

Thanks are addressed to Dr. Ateng Supriyatna M.Si, as a Lecturer of Plant Systematics that has give us directions so we can finish this article well.



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