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IDENTIFICATION OF BAMBOO TYPES (*Bambusoideae*) IN PONTIANAK CITY

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ABSTRACT

Pontianak City is one of the major cities in West Kalimantan and has high biodiversity, one is the bamboo plant which has important ecological and economic values. This study aims to identify bamboo and determine the distribution of bamboo in the East Pontianak sub-district. The methods used in this study include field surveys and sample collection in various locations in Pontianak City, as well as morphological and taxonomic identification in the laboratory Results Distribution and Identification of Bamboo Species (Bambusoideae) In East Pontianak District there are three bamboo genera namely Schizostachyum, Bambusa and Thyrsostachys with five types of bamboo with a total of 137 growing points or clumps, including, Schizostachyum brachycladum var "yellow" 6 clumps, Bambusa vulgaris var. Vulgaris 23 clumps, Bambusa vulgaris var. sriata 15 clumps, Thyrsostachys siamensis Gamble 72 clumps, and Bambusa multiplex 21 clumps. The types of bamboo that grow in the East Pontianak area grow at an altitude of 1.35 - 2.1m above sea level with an air humidity of 83 - 91%, soil pH of 4.9 - 6.2%, and temperature of 28 - 32°C.

Keywords: *Bamboo; Pontianak City; Identification.*

INTRODUCTION

Biodiversity has an important role in human life and can also be utilized for scientific development. Scientific studies on biological natural resources are still ongoing. Bamboo is one of the biological resources that has a reasonably high species diversity. The diversity of bamboo species in the world is recorded in as many as 75 genera and 1250 species (Sharma 1980; Sulistiono et al., 2018). One hundred and seventy-six species of bamboo grow in Indonesia, and of these, 109 species have the potential to be developed as industrial raw materials and handicrafts (Widjaja, 2019)

Bamboo has capillary-like stem properties that can store water in the rainy season and can release water in the summer, resulting in many springs around bamboo clumps (Junaid et al., 2022; Wulandari & Dewi, 2022). Bamboo can restore or reforest burned land, and harvest time is faster than that of other reforestation plants. It is environmentally friendly and has high economic value (Kamilia & Nawiyanto, 2015. Bamboo is a multi-benefit plant, so its presence in an ecosystem is very important to support various environmental conservation efforts, tourism development, and learning about vegetation in an area.

Bamboo is still quite widely found in Pontianak City; as an urban area, Pontianak City is overgrown with various types of bamboo, both naturally growing and those that urban communities have planted. However, the need for housing in urban areas will have an impact on land conversion, with the conversion of forest land into built-up land resulting in a decrease in the area of vegetated land that was initially used as green land into built-up land for

residential and industrial needs. Government policies in the agricultural sector and economic interests can also cause bamboo habitats in Pontianak City to decrease in carrying capacity. Bamboo species in several districts in West Kalimantan Province include *Gigantochloa hasskarliana*, *Gigantchloa ater*, *Gigantochloa balui*, *Gigantochloa levis*, *Schizostachyum brachycladum*, *Schizostachyum flexuosum*, *Dendrocalamus hirtellus*, *Dendrocalamus asper*, Dinochloa sp, *Bambusa multiplex*, *Bambusa vulgaris* (Vinsensia et al., 2020*;* Sisilia & Junisa, 2022*;*Heriadi et al., 2022). Data collection of bamboo vegetation in an area is important, among others, to support ecosystem-based spatial planning. However, the variety of bamboo species in Pontianak City has not been studied to date, so research on bamboo species exploration needs to be conducted. Exploration activities that focus on data collection of bamboo species in Pontianak City are an important step that aims to collect information on bamboo species in each sub-district and describe the morphological characteristics of each bamboo species.

METHOD

The research was conducted in Pontianak City, which is divided into six sub-districts: South Pontianak, East Pontianak, West Pontianak, Southeast Pontianak, City Pontianak and North Pontianak. The implementation time was in December 2022. The initial stage of the research was to observe the location to be used for research and then set the location for sampling and data collection. The methods used in this research include field surveys and sample collection in various locations in Pontianak City, as well as morphological and taxonomic identification in the laboratory. Data analysis was conducted to determine the type of bamboo found in the field based on journal literature and bamboo identification books (Widjaja et al., 2020).

RESULTS and DISCUSSION

Types of Bamboo Found

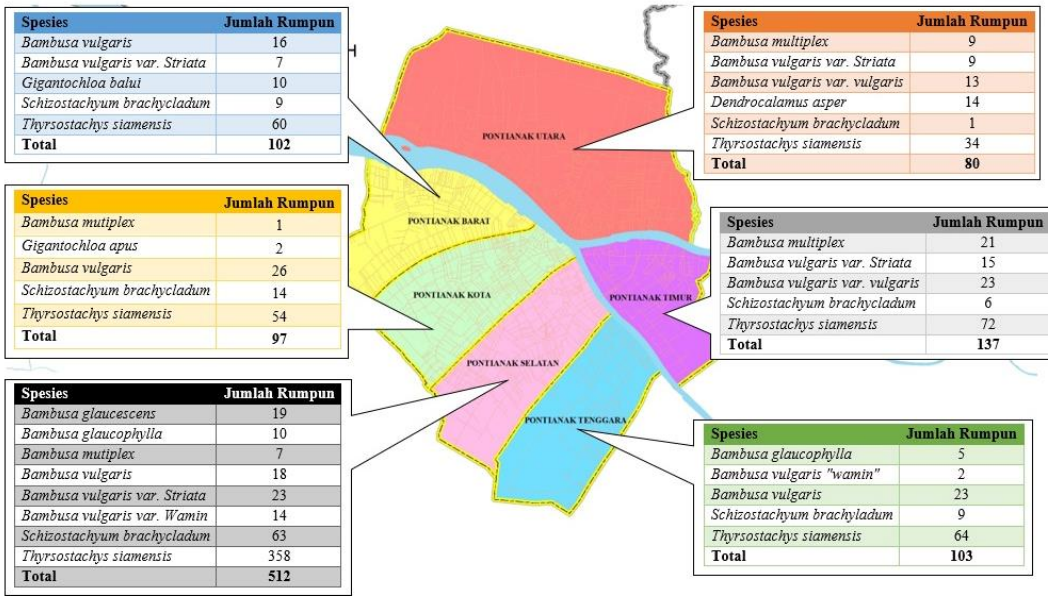
Based on the results of the research that has been carried out, 11 types of bamboo were found from 5 different genera, the five genera, namely the genus Bambusa, Schizostzchyum, Thyrsostachys, Gigantochloa, and Dendrocalamus (Table 1), is somewhat more than research (Ritonga et al., 2020) in the City of Langsa in Aceh where in his research six types were found with four genus spread across five sub-districts.

Table 1. *Types of bamboo found in East Pontianak District*

No	Spesies	Pontianak Location					
		South	Southeast	West	City	East	North
1	*Bambusa glaucescens*	√	-	-	-	-	-
2	*Bambusa glaucophylla*	√	√	-	-	-	-
3	*Bambusa mutiplex*	√	-	-	√	√	√
4	*Bambusa vulgaris*	√	√	√	√	√	√
5	*Bambusa vulgaris var. Striata*	√	-	√	-	√	√
6	*Bambusa vulgaris var. Wamin*	√	√	-	-	-	-

7	*Schizostachyum brachycladum*	√	√	√	√	√	√
8	*Thyrsostachys siamensis*	√	√	√	√	√	√
9	*Gigantochloa balui*	-	-	√	-	-	-
10	*Gigantochloa apus*	-	-	-	√	-	-
11	*Dendrocalamus asper*	-	-	-	-	-	√

Distribution of Bamboo Species in Pontianak City



Spesies	Jumlah Rumpun
Bambusa vulgaris	16
Bambusa vulgaris var. Striata	7
Gigantochloa balui	10
Schizostachyum brachycladum	9
Thyrsostachys siamensis	60
Total	**102**

Spesies	Jumlah Rumpun
Bambusa multiplex	9
Bambusa vulgaris var. Striata	9
Bambusa vulgaris var. vulgaris	13
Dendrocalamus asper	14
Schizostachyum brachycladum	1
Thyrsostachys siamensis	34
Total	**80**

Spesies	Jumlah Rumpun
Bambusa mutiplex	1
Gigantochloa apus	2
Bambusa vulgaris	26
Schizostachyum brachycladum	14
Thyrsostachys siamensis	54
Total	**97**

Spesies	Jumlah Rumpun
Bambusa multiplex	21
Bambusa vulgaris var. Striata	15
Bambusa vulgaris var. vulgaris	23
Schizostachyum brachycladum	6
Thyrsostachys siamensis	72
Total	**137**

Spesies	Jumlah Rumpun
Bambusa glaucescens	19
Bambusa glaucophylla	10
Bambusa mutiplex	7
Bambusa vulgaris	18
Bambusa vulgaris var. Striata	23
Bambusa vulgaris var. Wamin	14
Schizostachyum brachycladum	63
Thyrsostachys siamensis	358
Total	**512**

Spesies	Jumlah Rumpun
Bambusa glaucophylla	5
Bambusa vulgaris "wamin"	2
Bambusa vulgaris	23
Schizostachyum brachyladum	9
Thyrsostachys siamensis	64
Total	**103**

***Figure* 1.** Bamboo Distribution Map in Pontianak City)

The research results on bamboo distribution in Pontianak City obtained bamboo clump coordinates of each bamboo type in each sub-district in Pontianak City (Figure 1). These results show differences in the number and types of bamboo found in each sub-district. North Pontinak and Pontianak Kota are the two sub-districts that have the lowest number of species when compared to other sub-districts; this is because there is a considerable change in areas that were initially vegetated turning into built-up land to meet the needs of settlements, residential and industrial centers. South Pontinakan sub-district is the sub-district that has the highest number of bamboo individuals and species when compared to other sub-districts. This is because this sub-district is still often found in green open spaces and is a low-population urban area, so land change in this location is calculated to be lower than in other sub-districts. In addition, bamboo is a plant reproducing through rhizomes (stolons), which produce vegetative offspring that are still close to their parents, so tight rhizome conditions can increase the number of individuals found.

Description of Bamboo Types

1. *Schizostachyum brachycladum* var *yellow*.

Yellow gutter bamboo, with the Latin name*Schizostachyum brachycladum var yellow,* is often found in home yards and is often used as an ornamental shade bamboo because of the bright yellow color of the stem. It grows upwards and is not lush. Bamboo with a clumping growth pattern, tight and upright, straight spikelets, reaching a height of 8-15 m, which can be seen in Figure 1, starting to branch 1.5m above the ground, many branches up to 7-15 slender stalks and approximately the same size. The length of a single leaf is about 16-28cm, and the leaf blade is 8-25cm; the midrib ear is like a frame, ±10mm wide, and there are often fuzzy hairs, flat ligules (tongues), rough leaf surface and hairy leaf undersurface. The shoots are yellow or brown with a length of ±20-35cm, covered by brown "miang" hairs. There are also often curved frond ears on young shoots; the fronds are stiff and do not fall off easily, with a length of about 9-20cm, and the internodes are 19-32 cm long and yellow (Figure 2).

Figure 2. *(a) Bamboo clump (b) Leaves (c) Stem midrib (d) Shoots (e) Branching (f) Stem midrib hair (g) Bamboo culm Schizostachyum brachycladum var yellow.*

2. *Thyrsostachys siamensis Gamble*

It has an upright stem growth pattern and relatively small reed size, has a sympodial clump type, and grows upright with tight stems, reaching 8-15m in height. Light green bamboo shoots with a height of ± 12-30cm, the stem is straight with a segment length of about 22-34cm with a shiny dark green to green stem surface with white tones due to moss growth, smooth stem surface, and rarely found fine hairs, stem diameter 6-8cm and when split the thickness of the stem can reach 3-4cm with a small cavity in the middle of the stem, on each stem there is a reed frond that is attached and difficult to escape with a length of 15-25cm. There is a small curved reed frond ear (Figure 3).

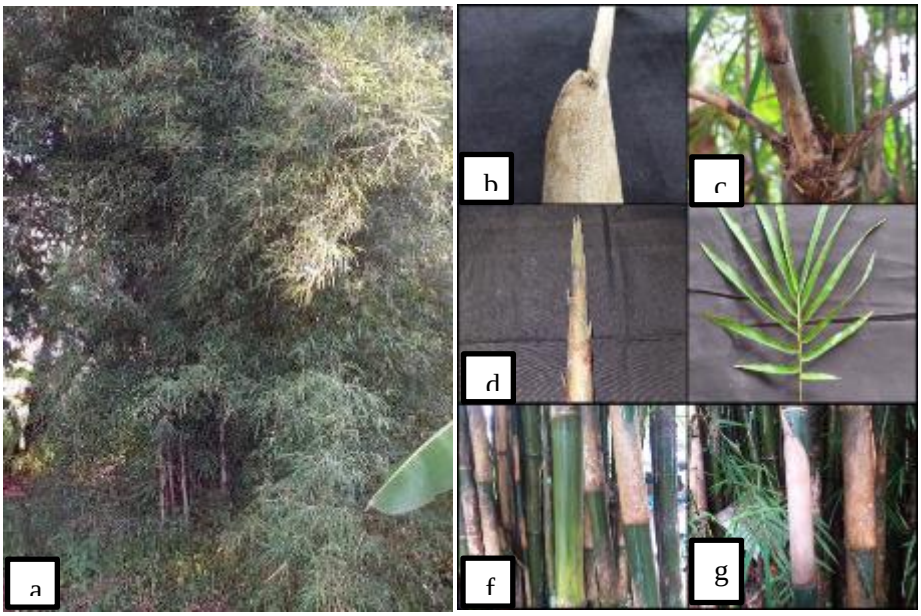


Figure 3. **(***a)Bamboo clump (b)Stem midrib (c)Branching (d)Shoot (e)Leaf (f)Stem (g)Bamboo midrib Thyrsostachys siamensis Gamble*

3. *Bambusa vulgaris* var*. Vulgaris*

Figure 4. *(a)Bamboo clump (b)Branching (c)Leaf (d)Ear of midrib (e)Stem (f)Feather of midrib (g)Bamboo shoot Bambusa vulgaris var. vulgaris*)

Bambu aur, whose Latin name is *Bambusa vulgaris* var *Vulgaris* is often found in open areas and is often used by the community as a building construction material because of its relatively large and upright stems. Bamboo Aur has sympodial clumps, is upright, and is not too tight. Reed's height reaches ± 20 m. Branching grows 1.5 m above ground level; each branch consists of 2-5 stalks, with one branch larger than the other branches (Lateral). Yellowish or green shoots covered with brown to black fur with a height of ± 15-35cm; in the phase of reed ear shoots, the reed midrib will be visible, which is rounded with the tip curved out, the reed midrib is stiff and quickly sheds The length of a leaf blade is about 27-40cm and the leaf blade

from the stem to the tip is ± 12-25cm, the leaves of this bamboo are bare. Clear primary reinforcement with tapered leaf tips, with a length of about 12-18cm. Small reed midrib ear tapered, internode length ±15-30cm, shiny dark green color, with a smooth surface, the reed wall is only about 1.2-2mm thick with a 4.5-7cm diameter (Figure 4).

4. *Bambusa vulgaris* var. *striata*

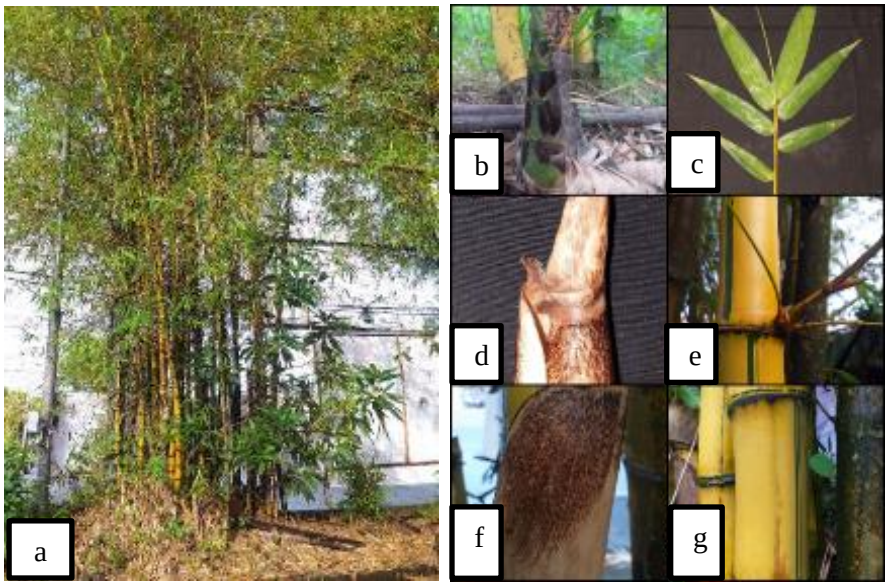


Figure 5. *(a)Bamboo clump (b)Bamboo shoot (c)Leaf (d)Ear of midrib (e)Branching (f)Midrib hair (g)Bamboo culm Bambusa vulgaris* var. *sriata*

Bambu aur kuning, with the Latin name *Bambusa vulgaris* var*. Sriata*, is a type of bamboo unique in its stem, which is yellow and has green lines. Yellow bamboo has sympodial clumps, is upright and not too tight, and has a reed height of 20 m, which is slightly sinuous and upright. The yellowish or green shoots are covered with brown to black fur with a height of ± 15-35cm; on the shoots, there will be a reed frond ear that is rounded with the tip curved out; the old reed frond will become stiff with a length of about 8-19cm. Branching grows ±1.5 m above ground level. Each branch consists of 3-5 stalks, with one branch dominant over other branches (Lateral), and there are often green lines on each branch. Internodes are ±15-30cm long, shiny bright yellow, and green lines are straight parallel to the direction of the fibers, with a smooth surface. The reed wall is only about 1.5-2.5cm thick and has a 4-7cm diameter. The length of a single leaf is about 24-36cm, and the leaf blade from the stem to the tip is ±8-12cm; the leaves of this bamboo are glabrous, and the primary reinforcement is visible with a tapered leaf tip (Figure 5).

5. *Bambusa multiplex*

Bambusa multiplex is a type of bamboo whose growth widens because the end of the stem will curl; this bamboo clump is the sympodial type with tightly growing stems. A single fishing bamboo leaf has a length that varies from 15-28cm from the base of the petiole to the tip of the leaf, with the length of each leaflet from 5-21cm, and at the base of the leaf blade, there is a small tapered leaflet ear. Light green bamboo shoots with a height of ± 14-23cm, and bamboo shoots that are getting older will become straight stems with internodes around 14-64cm long. This bamboo has a small diameter of about 1-2cm, and when cut, the thickness of the stem only reaches 0.2-0.5cm. The reed midrib is attached to the stem and is easy to detach when the stem is old with a length of 15-20cm, but it is rare to find a reed midrib ear. The long stem reed makes the branches that grow from the base of the stem taller, about 1.5-2m; each branch consists of 4-8 stalks of the same size, but often also found branches that have one

dominant stalk (Lateral). The petiole is about 20-35cm long; the leaf blade is light green (Figure 6).

Figure 6. *(a)Bamboo clump (b)Bamboo shoot (c)Leaf (d)Stem midrib (e)Branching (f)Bamboo culm (g)Bamboo midrib ear Bamboo Bambusa multiplex*)

6. *Bambusa glaucophylla*

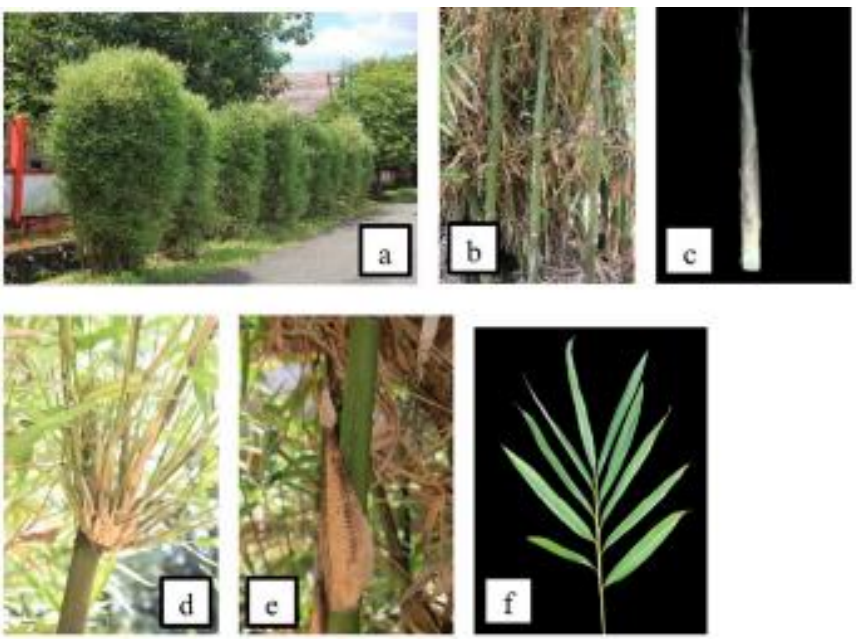


Figure 7. *(a)Bamboo clump (b)Bamboo culm (c) Bamboo shoot (d)Branching (e)Stem midrib (f) Bamboo Leaf ear Bambusa glaucophylla*)

Sympodial clumps grow upright, tight, and about 8-10 meters high. The bamboo shoots are slender with a pale green color with purplish variations at the lower base of the bamboo shoot, the midrib of the bamboo shoot is slightly dark purplish green bare, and the midrib leaves are upright; the length of the reed segment is about ± bamboo shoots found in the field are about ± 21 cm, 17-20 cm, 0.9-1.95 cm in diameter, and green in color, the surface of the bamboo is smooth, and there is a shiny black "miang", the walls are thin; branches numbering 6-9 branches of which one branch is larger than the other branches; reed midrib measuring about ± 10 cm in length with a brown color and covered with rough black "miang" that covers the

middle area to the top of the midrib, the midrib is easily detachable, the ligula is flat, the ear of the midrib forms a slight arch next to the tip of the midrib, the tip of the midrib is triangular and upright (Figure 7). Widjaja et al., (2020) stated that the length of *B. glaucophylla* internodes reaches 20-25 cm with a diameter of 0.15-0.25 cm; the midrib of the reed is quickly shed, and branching grows with one dominant branch and other smaller branches.

7. ***Bambusa glaucescens***

Figure 8. *(a)Bamboo clump (b)Bamboo culm (c) Bamboo shoot (d)Branching (e)Stem midrib (f) Bamboo Leaf ear Bambusa glaucescens)*

Sympodial clumps grow upright, tight, and can be up to ± 1 meter high. The shoots are green with a white waxy coating. Each book has 7-9 branches that are almost the same size. The length of the internodes ranges between 24 - 27 cm with a diameter of 0.3 - 0.6 cm. The reed is thin-walled, glossy green in color, and has stiff brown "miang" hairs, especially at the bottom of the reed books; these books are slightly bare and protrude. The fronds of the reed are quickly shed, narrowly trapezoidal, initially covered with a thin layer of white powder. Glabrous type, asymmetrically curved with an oblique tip on the outside, the ear of the reed midrib is tiny, indistinct, or fringed 0.1-0.2 cm high, and the bristles are as short as 0.3 cm. The ligule is irregularly serrated, 0.15 cm high, and the tip of the reed frond is erect and triangular. The reed frond leaves are erect with a narrow triangular shape and readily deciduous with a base almost as broad as the frond tip. The tips of the fronds are pointed on the outer side with a brown margin. The leaves on the twigs are ribbon-shaped, with a size of 5-13 × 0.6-1.5 cm, the lower surface slightly hairy, whitish, and gathered 5-15 pieces at the end of the twig. The ear of the leaf blade is small, with short fuzzy hairs and a serrated ligule 0.1 cm high (Figure 8). *Bambusa glaucescens* is often used as an ornamental plant plant grown by the community to be used as a plant yard. It plays an important role in various fields, both the food industry, such as flour products, environmental conservation in riparian areas, and building materials (Mentari et al., 2018; Riastuti et al., 2019).

8. *Bambusa vulgaris f. Waminii*

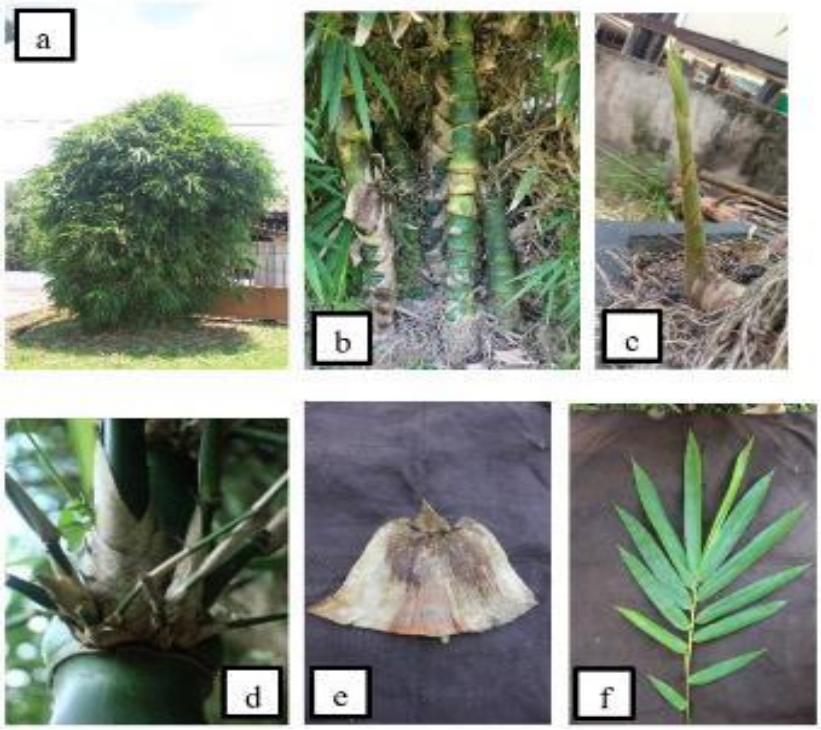


Figure 8. (a)Bamboo clump (b)Bamboo culm (c) Bamboo shoot (d)Branching (e)Stem midrib (f) Bamboo Leaf ear Bambusa vulgaris f. Waminii

Sympodial clumps grow upright, tight, and about 10-12 meters high. Young bamboo shoots are pale green in color, the color of the bamboo shoots will change to light yellowish green with a fine white cover on all parts of the bamboo shoot midrib, the tips of the bamboo shoot midribs are yellowish green, about 10 cm long and tapered; the reed bulges at the center of the reed and tapers at the book of the reed, the bamboo reed is green in color, internodes 20-45 cm long, 5-10 cm in diameter; branching consists of 3-6 branches, with one branch larger than the other branches, when viewed at a glance the young branching looks like small bamboo shoots attached to the stem; the fronds of this type of bamboo reed are about 18 cm in size with a brown color and are covered with coarse black miang hairs which almost cover all the frond surfaces, the fronds are easily shed, with reed frond ears that form small arches, irregular jagged ligules, the tip of the reed frond is about ± 7cm long and upright; the leaves of this type of bamboo are shiny dark green with a leaf size of 52 x 30 cm, a slightly rough surface and apparent reinforcement parallel to the primary leaf bone, has a midrib ear that is a small triangle tapered and curved outward but does not have bristles, there are short but jagged ligules. The leaf tip is tapered. The upper surface is smooth; the underside is slightly rough and hairy (Figure 8). Widjaja (2019), states that Bambusa vulgaris Var. Wamin can grow to a height of 10-12 m with internodes 4-6 cm long and 5-10 cm in diameter. Has pale green young shoots and will turn yellowish green. Covered with brown to black fur. Its branching amounts to 3 - 6 branches, with one branch larger than the others. Quickly shed fronds covered with black to dark brown fur, tapered frond ears. 1 - 1.5 cm high and bristles up to 0.7 cm long. It has irregularly serrated ligules 0.2 - 0.3 cm high with short bristles. The front tip of the reed is erect and triangular; the reed frond leaves are erect and triangular with a widened base. Leaves have tiny midrib buds that are 0.1 cm high and short bristles that are 0.1 - 0.2 cm long.

9. *Gigantochloa balui*

Gigantochloa balui K.M. Wong has a clump type and tight sympodial rhizomes, stem height reaches 10-12 m. The number of stems per clump 17-40 (Appendix 4) is dark green, the diameter of the stem reaches 2-5 cm, the length of the internode is 20-30 cm, the wall thickness reaches 2-5 mm, the lateral branching grows with one branch larger than the other branches (Figure10), this is similar to that conveyed by Widjaja et al.,(2020) the internode length reaches 40 cm, with a diameter of 3-8 cm. Blackish green bamboo shoots have white lines covered with white hairs, brown bamboo shoot hairs with fine white hairs, and white bamboo shoot coating. The midrib is brown; the ear is flat; the bristles are visible; the ligule is serrated; the tip of the midrib is pointed and curved outward; and the midrib leaves are curled back and triangular and easily shed. Dark green leaves, parallel reinforcement, slightly rough leaf surface, hairy, pointed leaf tip, oval base, straight leaf veins, small visible ears, flat ligules, and leaf length reach 30-36 cm; leaf width reach 2.4-3.1 cm (Appendix 2). *Gigantochloa balui K.M. Wong* grows at an altitude of 2.13-10.61 meters above sea level with a soil pH of 5.2-6.8, and this type of bamboo grows at temperatures reaching 28°C-31.2°C and air humidity of 77%-83%. This type of bamboo is found growing naturally on the banks of large ditches.

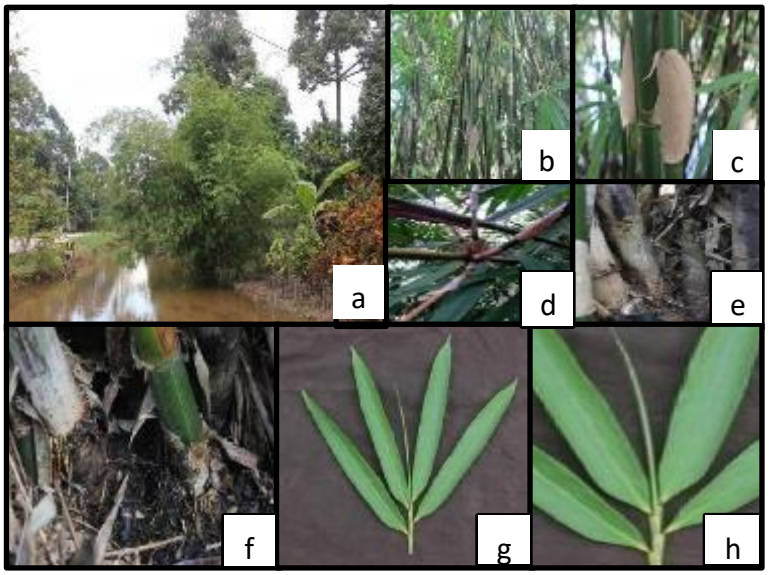


Figure 10. *(a)Bamboo clump (b)Bamboo culm (c)Stem midrib (d)Branching (e)Shoot (f)Rhizome (g)Bamboo leaf (h) Leaf* midrib *Bamboo Gigantochloa balui*

10. *Dendrocalamus asper*

The rhizome roots of this bamboo are of the "pakimorf" type, with aerial roots that grow up to the stem. Purplish green or purplish green bamboo culms can reach 15 meters, with a distance between each internode of 22.8 cm and a diameter of 5.4 cm. Young bamboo culms are whitish-green in color and, as they age, turn green with white splotches caused by the growth of white moss attached to this part. (Alataris et al., 2019). The bamboo shoots are purplish black, covered in brown to blackish hairs with 5-12 cm height. Bamboo grows with a sympodial clump type. Branching begins to grow in the middle of the stem, which consists of 5-9 branches. One branch is larger than the other branches. The bamboo plant can be said to be an utterly leafy plant because it has a petiole (petioles), leaf midrib (vagina), and leaf blade (lamina). The shape of the leaves on bamboo is lanceolate; this is because the center of the leaf has the widest size compared to the oval-shaped frame, and the tip of the leaf is tapered (Figure 11). *Dendrocalamus asper* is green with bristles up to 4 mm in size. The midrib of the reed is easily shed and covered with black to dark brown hairs, rounded ears, and sometimes curled to the base of the reed midrib, with 3-5 mm long bristles; the midrib is hugged back in a triangle. This is similar to that conveyed by Widjaja et al.,(2020) that reeds are green, dark

green, purplish green, or whitish green - whitish and white spotted because there are three moss requirements as complete leaves, namely having a leaf blade or leaf midrib (vagina), petiole (petioles), and leaf blade (lamina).

In *Dendrocalamus asper* it has a smooth surface. The base of the leaf is oval with a tapered tip and green in color, with bristles reaching 4 mm. The reed midrib is quickly shed and covered with black to dark brown hairs; the ear is rounded and sometimes curled to the base of the reed midrib, with 3-5 mm of hairs, and the midrib is hugged back in a triangle. This is similar to that conveyed by Widjaja et al., (2020) that the reed is green, dark green, purplish green, or whitish green and white-spotted because there is moss when old, besides aerial roots surrounding the books. Habitat Betung bamboo grows well in moist and wet tropical alluvial soils but also grows in dry areas in lowlands and highlands, according to Alataris et al., (2019), in North Pontianak District, betung bamboo is found growing with an average pH of 4.9 and with 86% humidity. For its distribution, it is found in the lowlands around the banks of the ditch flow. Dendrocalamus asper has various benefits, one of which is probiotic products; lactic acid bacteria from the bamboo shoots of this plant can be isolated and used as probiotics in beef. Isolates from this plant have antimicrobial activity and tolerance to various pH conditions and garan content, so they have the potential to be used as natural preservatives (Angelina, 2015).

Figure 11. *(A)Bamboo clump (B)Bamboo stem (C)Shoots (D)Branching (E)Bamboo Leaves (F)Bamboo Fronds Dendrocalamus asper.*

11. *Gigantochloa apus*

Bamboo shoots are green with a conical shape, ranging in size from small to large and 5-17 cm in diameter. The midrib of the bamboo shoot is brown and covered with brown to black hairs with green midrib leaves (Figure 12). Bamboo culms are erect with curved ends and a green reed color; on the surface of the rough culms are many hairs. The diameter of the culm ranges from 10-15 cm, and the length between internodes is 30-40 cm; the wall thickness of the ringko reaches 5-10 mm. Branching grows away from the ground, with one branch more significant than the other (lateral). Reed fronds are quickly shed and brown; there are black bristles, which are almost all parts of the reed frond; the reed frond ear is rounded with 1-2 mm high spurred bristles, the ligule is 1 mm high, has a well-developed ear and ligule and the stem frond leaves are stooped or hugged back with a tapered tip, with a frond length of 15-29 cm (Alataris et al., 2019). Bamboo leaves have a slightly rough surface; behind the leaves,

there are fine hairs, the base of the leaf is oval with a tapered tip, and the ear of the leaf midrib is like a frame 1mm high. Leaf reinforcement is parallel like grass, has a prominent main leaf bone, is green in color, has a leaf length of 15-46 cm, and a leaf width of 4-9 cm (Alataris et al., 2019). Is similar to what Widjaja et al., (2020) said: growing up to 22 m straight, upright, and tight, the fronds of the reed are not quickly shed; the fronds are covered with brown to black fur 1-3 mm high, the length of the bristles reaches 7mm, the ligula is 2-3 cm high with a bristle length of 3-5 mm, hugged back, the shoots are covered with brown to black fur, the fronds spread out with hugging back, the young reed is covered with brown fur when old, green in color, the length of the internode is 20-60 cm, the diameter is 4-12 cm, and the wall thickness reaches 15 m. Branching 1.5 m from the ground, each internode consists of 5-11 branches, with one more significant than the others. Abaxial leaves slightly hairy, small rounded midrib ear, 1-2 mm high, without fuzz, ligule flat, 1 mm high.

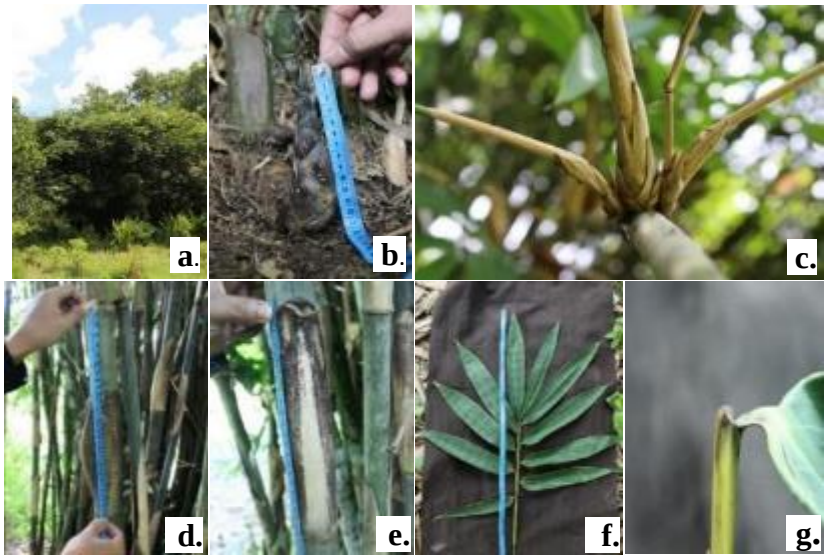


Figure 12. *(a)Bamboo clump (b)Bamboo shoot (c)Branching (d)Bamboo culm (e)Stem midrib (f)Leaf (g)Leaf midrib.*

CONCLUSIONS

Based on the research, 11 bamboo species were found : *Bambusa glaucescens, Bambusa glaucophylla, Bambusa mutiplex, Bambusa vulgaris, Bambusa vulgaris var. Striata, Bambusa vulgaris var. Wamin,* Schizostachyum *brachycladum, Thyrsostachys siamensis, Gigantochloa balui, Gigantochloa apus* and *Dendrocalamus asper* yang berasal wich 5 genus namely Schizostachyum, Thyrsostachys, Bambusa, Gigantochloa dan Dendrocalamus. The types of bamboo grow in the Pontianak City area at an altitude of 1.35 - 2.1 meters above sea level, with humidity 83 - 91%, soil pH 4.9 - 6.2%, and temperature 27.2 - 30.4 °C. The distribution pattern of bamboo in this area is diffuse due to the growth of bamboo clumps limited to residential yards, office parking lots, and densely populated settlements

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