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Morphological Characteristics of Armon (*Syzygium garcinioides*) Endemic Plants at Maybrat, Southwest Papua Province

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Abstract

This study aimed to determine morphological of *Syzygium garcinioides* at Ayamaru and Aitinyo Districts, Maybrat Regency, Southwest Papua Province. The supporting roots of this guava were brown and grow straight into the soil with a relatively rough texture and brown spots. The stem of this plant was clear (a plant that had a real/true stem, the stem grown steadily above the ground surface and branches, branches and leaves appear). Armon leaves were single leaf type, opposited leaf position, oval-shaped leaves with small tapers at the tip. Armon flowers appear as compound (together in one flower arrangement) consisting of a number of flowers on one stalk This fruit had a thin, smooth skin on the surface and on the inside of the fruit flesh there was 1 single seed.

Keywords: Characteristics; Branches; Leaves; Flowers; Fruit; *Syzygium garcinioides*

1. Introduction

The species of the Myrtaceae family had formed limited populations and distribution areas, but other species had formed large populations and distribution areas. One of these species was Armon. Armon was a species of guava plant from the Myrtaceae family that was distributed in a limited way. Armon plants grown naturally in the Ayamaru and Aitinyo regions and produce guava fruit that was often consumed by people in the Ayamaru and Uter Lake areas. According to [1], the armom plant was developed by the Maybrat Regency Forestry Service as a potential local commodity with economic value in the rehabilitation of the Ayamaru lake area. The development included the provision of seeds and planting. This plant was also being developed as a critical land rehabilitation plant through the development of green open spaces, especially in urban areas.

Urban green open spaces were part of the open spaces of an urban area filled with plants, vegetation (endemic or introduced) to support ecological, socio-cultural and architectural benefits that could provide economic benefits (welfare) for its people. Green open space was a location that was designed to have minimal access to the surrounding environment, a meeting place for humans or users of public spaces and the behavior of people using public spaces with each other followed local norms [2]. Green open space In the Regulation of the Indonesia Minister of Public Works number 05/PRT/M/2008 concerning guidelines for the provision and Utilization of Green Open Space or Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency Number 14 of 2022 concerning the Provision and Utilization of Green Open Space aimed to maintain the availability of land as a water catchment area,

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created aspects of urban planning through a balance between the natural environment and the built environment that was useful for the interests of the community and increase the harmony of the urban environment as a means of securing a safe, comfortable, fresh, beautiful and clean urban environment. Based on this and in relation to the development of green open space commodities, it was necessary to provide data and information related to armon as one of the potential local commodities through scientific studies.

2. Material and methods

2.1. Place and Time

This research was conducted in Ayamaru and Aitinyo Districts, Maybrat Regency, Southwest Papua Province for 6 months (April to September 2024).

2.2. Methods and Techniques

The method used in this research was descriptive method with observation and interview technique. According to [3] that descriptive research through a qualitative approach was used to determine the variable value of one or more variables that were interrelated and influence each other.

2.3. Data Collection

Morphological data collection (color, size and other characteristics of armon plant parts)

2.4. Data Analysis

Morphological characteristic data of armon plants were analyzed descriptively based on the characteristics of color, size and other characteristics of armon plant parts. The plant parts in question included the characteristics of the roots, stems, leaves, flowers and fruit parts.

3. Results and Discussion

3.1. Roots

The roots of the armon plant were taproots (radic primaria) with small branches. The supporting roots of this guava were brown and grow straight into the soil with a relatively rough texture and brown spots. The root branches were small and showed the same color as the supporting roots (brown). The characteristics of the armon roots were like relatives of this type which commonly known as the bol guava (*Syzygium malaccens* L). According to [4], the Gondangmanis guava plant in Gondangmanis village, Bandarkedungmulyo district, Jombang regency had a tree plant habitus, plant height ranges from 8.5-10 m, leaf area 256.50-338 cm^2, leaf width 10-13.5 cm^2, leaf length 25-28 cm^2, cylindrical leaf stalk shape, dark brown leaf stalk color, dark green upper leaf surface color, light green lower leaf surface color, obtusus leaf base shape, acuminatus leaf tip shape, integer leaf edges, oval leaf structure, brown stem color, stem circumference 81-140 cm, round stem shape, number of main branches 12-16, axillary flos flower location, number of flower petals 4, hermaphrodite flower type, pink flower color, genta fruit shape without waist curve, fruit circumference 14-17.5 cm, fruit weight 78-105 grams, flesh thickness 0.7-1.3 cm, fruit length 8-8.8 cm, fruit color reddish purple, seed shape spheroid, number of seeds 1, seed weight 8-14.5 grams and seed circumference 6-9.2 cm.

3.2. Stem

The armon plant had a hard and strong woody stem (lignosus) with a larger structure at the base and smaller towards the tip. The stem of this plant was clear (a plant that had a real/true stem, the stem grown steadily above the ground surface and branches, branches and leaves appear). The direction of stem growth which was the position of the direction of stem growth from the ground surface was a perpendicular type (erectus). The shape of the cylindrical stem was not curved and did not have sap with a branch-free height reaching 1-5 m with a diameter at breast height <30 cm, not buttressed and brown with white spots. The crown of the armon tree was round (Rounded) with a stature as a medium-sized tree with a height reaching <15 m. The morphological characteristics of the armon stem were almost the same as 2 relatives of this type (Water guava and bol guava). According [5], water guava had a low tree, evergreen, 3-10 m high, with a short and crooked trunk, 30-50 cm in diameter, scaly brown bark, often branching near the base and with an irregular crown and irregular and scaly branches. According to [4] the guava plant in Gondangmanis village, Bandarkedungmulyo district, Jombang Regency had a tree plant habitus, the plant height ranged from 8.5-10 m. The

color of the trunk was brown, the circumference of the trunk was 81-140 cm, the shape of the trunk was round and the number of main branches was 12-16.

3.3. Leaves

Armon leaves were single leaf type, opposited leaf position, oval-shaped leaves with small tapers at the tip. Young leaf tips were purple then would turn dark green when mature. Leaf length was 7-9 cm and width was 4-6 cm. The size of this guava leaf was like water guava in general, but relatively smaller. According to Lim [4] water guava leaves were pinnate, oval to oblong, 7-25 cm × 2.5-16 cm, heart-shaped base, round or blunt, blunt or pointed tip, intact, bald on both surfaces, clear, slightly fragrant when squeezed, pink when the young leaf stalk was light green with a length of 0.5-1.5 mm.

3.4. Flowers

Armon flowers were white flowers clustered with flower stalk and flower based structures and had pollen and nectar. Armon flowers appear as compound (together in one flower arrangement) consisting of a number of flowers on one stalk. According to [5] water guava flowers were composed of terminal and axillary leaves, 3-7 flowers; flower diameter 2.5-3.5 cm, white; calyx tube 5-7 mm long, 4 strands; four petals, spathulate, reaching 7 mm in length, yellowish white; many stamens with white color, oval shape with a length of 0.75-2 cm, oval anthers oval yellowish; pattern up to 17 mm, yellowish white. The location of the flos axillary flower, the number of petals 4, hermaphrodite flower type, pink flower color [4].

3.5. Fruit

Armon fruit was oval, white, some were red depending on the variety. This fruit had a thin, smooth skin on the surface and on the inside of the fruit flesh there was 1 single seed. The fruit shape was oval, fleshy, white to dark red with white or pink lines. Each fruit contained 1 seed found on the flesh of the fruit which was round, large, brown. ccording to [4] the shape of the guava fruit was a genta without a waist curve, fruit circumference 14-17.5 cm, fruit weight 78-105 grams, flesh thickness 0.7-1.3 cm, fruit length 8-8.8 cm, reddish purple fruit color, spheroid seed shape, number of seeds 1, seed weight 8-14.5 grams and seed circumference 6-9.2 cm.

4. Conclusion

Armon were a species of the Myrtaceae family with the supporting roots of this guava were brown and grow straight into the soil with a relatively rough texture and brown spots. The stem of this plant was clear (a plant that had a real/true stem, the stem grown steadily above the ground surface and branches, branches and leaves appear). Leaves were single leaf type, opposited leaf position, oval-shaped leaves with small tapers at the tip. Flowers appear as compound (together in one flower arrangement) consisting of a number of flowers on one stalk This fruit had a thin, smooth skin on the surface and on the inside of the fruit flesh there was 1 single seed

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declared no conflict of interest regarding the publication of this paper.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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