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IDENTIFICATION OF MORPHOLOGICAL CHARACTERISTICS OF LOCAL DURIAN KERINCI (*Durio zibethinus.sp*)

Jasminarni[1,*], Evita[2], Trias Novita[3]
[1,2,3] Universitas Jambi, Jambi, Indonesia
Corresponding author email: jasmi_narni@unja.ac.id

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Abstract :
The durian plant (Durio zibethinus Murr.) is known as a wet tropical fruit native to Indonesia. The durian plant is a native Indonesian fruit with uneven production throughout the year. Nationally, durian plants experience harvest seasons that are not simultaneous. Durian is very popular with everyone, so some call it the king of fruits or the queen of fruits. Besides the sweet fruit, fragrant with yellowish-white flesh color, and rich in calories, vitamins, fat, and protein, the stems can also be used as a building material. This study used participatory observation methods and in-depth interviews to obtain qualitative descriptive data with village officials, village communities, and durian farmers in the Sitinjau Laut sub-district, Keliling Danau sub-district, and Danau Kerinci sub-district. Based on research results, there are still many types of local superior durian plants in the community that need to be rescued because their number and whereabouts are challenging to track down and are very few and old. Types of durian in Kerinci Regency are very diverse in shape and type, each of which has advantages and disadvantages. There are still many types of superior durian with superior properties that are not inferior to other types of regional durian. The type of durian that has been recorded is a superior type that is already rare because there are very few of them.

Keywords: Kerinci Local Durian, Morphology

INTRODUCTION

The durian plant (Durio zibethinus Murr.) is known as a wet tropical fruit native to Indonesia with uneven production throughout the year. Nationally, durian plants experience harvest seasons that are not simultaneous. Durian is very popular with everyone, so that some call it the king of fruits or the queen of fruits. Besides the fruit being sweet, fragrant with yellowish-white flesh and rich in calories, vitamins, fat and protein, the stems can also be used as a building material (Purnomosidhi et al 2007).

Durian besides having high economic value in the trade market and has the potential to be developed, because it is a favorite fruit in Indonesia and is one of the leading fruits at the national level. Durian fruit has many benefits for humans, namely, as fresh and processed fruit food (Rusmiati, 2013). The low durian production is caused by several factors including the procurement of superior seeds and the cultivation techniques that are applied so that new innovations are needed to increase durian production. One of the important durian fruit centers in the Kerinci area is in the Districts of Sitinjau Laut, Keliling Danau and Danau Kerinci. The diversity of durian fruit in these locations is obtained during the durian season. The durians produced are conventionally grown local durians where the seeds come from seeds with very little genetic quality and maintenance. This is due to farmers' cultivation knowledge that is still low. Most farmers grow durian in their yards and gardens on a small scale.

Durian plants have different characteristics, so it is necessary to select from a variety of different characteristics, so that it will be known which type of durian has the most superior properties

and has high productivity. This includes durian plants that grow in the Districts of Sitinjau Laut, Keliling Danau and Lake Kerinci. As a durian-producing center area in Kerinci Regency, the level of diversity of durian plants in the area is still very high, which has an impact on the less than optimal yields obtained, so it is necessary to identify the various plant diversity that exists in the area. From the identification, it is hoped that the characteristics of high-yielding durian plants will be known, so that it can be recommended as a type of plant that will be planted by the community in the area.

Durian fruit is a tropical plant, so it can grow well in Indonesia. The height of the durian stem can reach ± 50 m, with the stem erect, woody, round, having many branches and forming a cone-like or triangular canopy. The durian branching system grows horizontally or vertically, forming an angle of 300 - 400 depending on the variety. Branches that are located at the bottom or at the top are the places where flowers are attached (Rukmana, 1996).

Durian fruit varies, some are sweet, fragrant with white, yellow, orange flesh and are rich in calories, vitamins, fat, and protein. The stems can also be used as building materials (Purnomosidhi, 2007). The leaves of the durian fruit vary according to the variety. Durian fruit varieties between one and have differences in the shape of the leaves. The shape of the leaves on the durian fruit is oval, lanceolate, and lanceolate. Durian leaf tip length is generally <2 cm. There are 2 shapes at the base of durian fruit leaves, namely blunt and rounded (Irawan et al, 2007).

The height of the place for planting durian should not be more than 800 m above sea level. But there are also durian plants that are suitable for planting at various heights. Land that is hilly/with a slope of less than 15 is less practical than flat land. Rainfall for durian plants is a maximum of 3000-3500 mm/year and a minimum of 1500-3000 mm/year. Rainfall is evenly distributed throughout the year, with 1-2 months of dry before flowering is better than continuous rain. The intensity of sunlight needed by durian is 60-80%. When they were small (just planted in the garden), durian plants could not stand the hot sun in the dry season, so the seeds had to be protected/shaded. Durian plants are suitable at an average temperature of 20°C-30°C. At a temperature of 15°C durian can grow but the growth is not optimal. When the temperature reaches 350C the leaves will burn (Rukmana, 1996).

Durian plants require fertile soil (soil rich in organic matter). Soil suitable for durian is grumosol and ondosol soil types. Soil has the characteristics of a dark grayish-black color, the topsoil structure is granular, while the bottom is lumpy, and the ability to hold water is high. The degree of soil acidity desired by durian plants is (pH) 5-7, with an optimum pH of 6-6.5. Durian plants are annual plants with deep roots, so they require sufficient depth of soil water, (50-150 cm) and (150-200cm). If the groundwater depth is too shallow/deep, the fruit will not taste sweet/the plants will dry out/the roots will rot due to constant flooding.

Durian is a tropical plant, therefore it can grow well in Indonesia. The length of ripe durian fruit can reach 30-45 cm 20-25 cm wide, and weigh between 1.5-2.5 kg. Each fruit contains 1-5 seeds covered with white, cream, yellow, or dark yellow flesh. Each durian variety determines the size of the fruit, taste, texture, and thickness of the flesh (Sugiyarto, 2013). Durian is widely referred to as a forest tree and is usually of medium to large size, reaching a height of 50 m and generally reaching tens to hundreds of years. The shape of the tree (canopy) is similar to a triangle with the bark being dark red-brown, rough, and sometimes flaky. The durian plant has male and female genitalia in 1 flower so it is classified as a perfect flower.

Durian leaves have a single leaf (folium simplex), elongated, oval, and lanceolate in shape. The base of the leaf is rounded with a tapered tip, a rather thick, smooth surface, and stemmed, while the length of the leaf is about 9-19 cm and 3-6 cm wide. The length of the petiole is 1.2 - 2.3 cm. The leaf surface is light green to dark green and the lower surface is yellow (Irawan et al., 2007). The durian plant has leaves that are flat, wide, and green in color. The green color of the leaves is caused by the content of chloroplasts in the leaf cells. Inside the chloroplast is chlorophyll. Morphologically, durian leaves have leaf blades and petiole parts. On the petiole, there is a part attached to the stem which is called the base of the petiole (Bernard and Wiryanta, 2008).

Durian leaves are oblong to lanceolate in shape, 10 – 15 (-17) cm long, and 3 – 4.5 (-12.5) cm wide. The leaves are generally alternate, stemmed, and have a sharp or blunt base and a sloping sharp tip. The upper side is bright green, while the lower side is covered with silver or golden scales with star hairs. Flowers appear on stems or branches that are large, stemmed, white to golden brown bell-shaped petals. Capsule-type durian fruit is round, ovoid to oval with a length of up to 25 cm and a diameter of

up to 20 cm. Thick fruit skin yellowish green, brownish, to grayish. The surface of the durian skin has sharp corners (thorns). In general, the weight of the durian fruit can reach 1.5 – 5 kg (Benard and Wiryanta 2008).

RESEARCH METHOD

The research was conducted in Kerinci District. The time for conducting research is from June to December 2021. The materials and tools used in this study were local Kerinci durian plants in Danau Kerinci District, Keliling Danau District and Sitinjau Laut District while the tools used were cameras, inventory plates. meter, stationery and questionnaire. This study used participatory observation methods and in-depth interviews to obtain qualitative descriptive data with village officials, village communities and durian farmers in each Keliling Danau sub-district, Danau Kerinci sub-district and Sitinjau Laut sub-district.

RESULTS AND DISCUSSION

The results of identification of durian in three durian-producing districts in Kerinci Regency, namely Sitinjau Laut District (Hiang Village), Keliling Danau District (Talago Village) and Danau Kerinci District (Talang Kemulun Village). Based on the characteristic results obtained from the 9 samples used, the local Kerinci durian did not have differences in quantitative and qualitative characters in leaf and fruit morphology (tables 1 and 2).

Table 1. Quantitative characters of leaf width, leaf length, ratio of leaf length and width, petiole length

Several types of durian are considered superior by each owner of the durian garden they have, and based on field observations, each farmer has their own superior type of durian plants in their garden. Nearly 60 percent of the people sampled have durian plants in different numbers and areas, with various types and characteristics of the fruit. Based on field observations, almost all durian gardens are old, and generally these plants are inherited from their predecessors.

In Kerinci Regency, especially the Sitinjau Laut District, Keliling Danau District and Danau Kerinci District, for the past few seasons it has been a quite a lot of durian-producing areas, producing durian fruit. It is suspected that young durians have not yet produced fruit, the existing stems do not produce fruit and the number of existing stems is very few because the stems are too old, many durian stems have died due to age, deliberately cut down for boards, maintenance is barely carried out, and there is no effort to save and replant the existing land. It is a pity that most of the superior germplasm sources have been lost.

Table 2. Results of local superior durian inventory in Kerinci Regency.

The districts of Keliling Danau, Sitinjau Laut and Danau Kerinci were quite large durian-producing areas last season, because apart from old durians, there are also many young durian stems that have started to bear fruit. Based on observations in the field, there are also many pretty good durians sold by the community, especially the size and shape of the fruit which are nice and big, as well as the contents of the fruit which are thick and sweet.

Each sub-district used as a sample has different advantages of durian fruit based on the color of the fruit contents, fruit taste, and the thickness of the fruit flesh. Excellence is not only based on the size of the fruit, but in other areas more priority to the color of the filling, taste and thickness of the filling. These superior traits in the sub-districts of Sitinjau Laut, Keliling Danau and Lake Kerinci are still commonly found in community gardens, but have not been properly recorded.

Data on durian plants in table 1 above is a small part of the data collected due to limited reach and funds. Due to the condition of the community's durian gardens, most of them are located in hilly areas with long distances, which is the main obstacle in collecting data on this durian plant. From these data, there are many types of durian filled with yellow (copper), each with its own character, and of course the superior characteristics of the type of copper that will be developed.

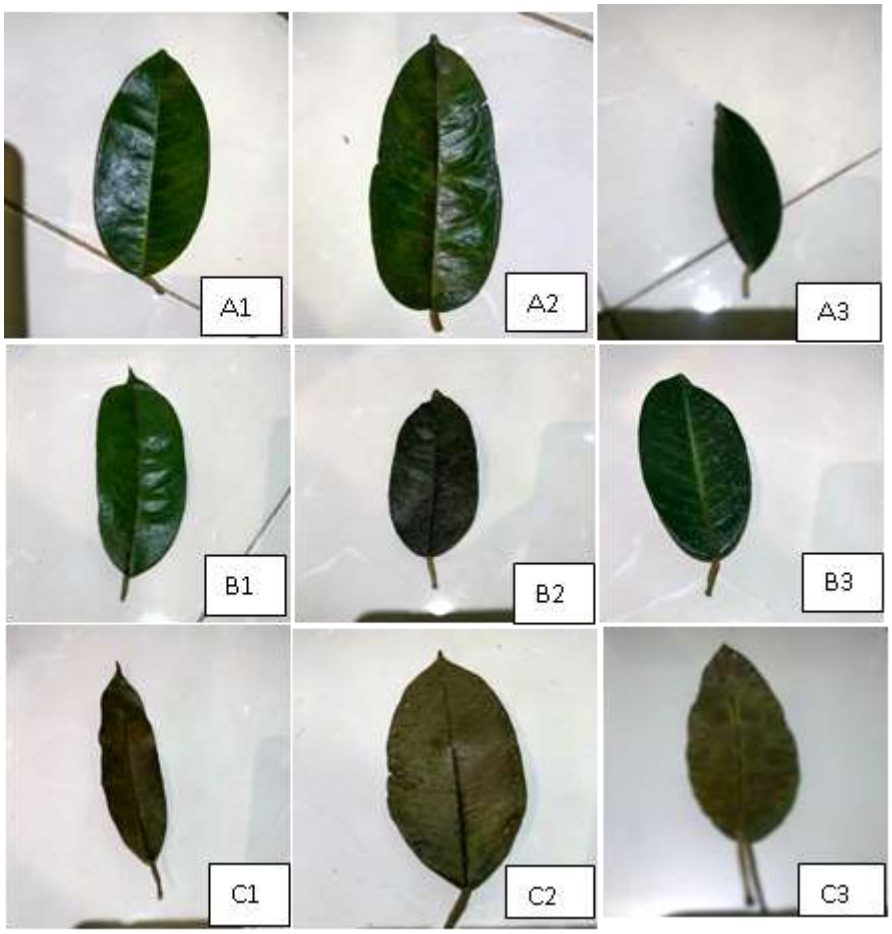

Figure 1. The shape of the local Kerinci durian leaf

The local Kerinci durian has an average leaf width of over three centimeters. The length of the local Bangka durian leaves ranges from (11.0-20.4 cm). The length of the local Kerinci durian leaves belongs to the intermediate group (10.1-15.0 cm). The leaf shape is oval, the leaf base is rounded, the tail length is medium, and the leaf color is green. The shape of the leaves found in the local Kerinci durian plants from three sub-districts (Lake Kerini, Keliling Danau, and Sitinjau Laut) are almost the same.

Based on the survey results and data collection on the local Kerinci durian with a sample of three sub-districts and each sub-district consists of three villages, namely: a) Danau Kerinci District (Talang Kemulun Village), b) Keliling Danau District (Talago Village) and Sitinjau Laut District (Hiang Village). Surveys and inventories were carried out in each sub-district, each represented by one village, and data obtained from several informants. It was found that the average age of the local Kerinci durian ranges from 40-80 years, the height of the stem is between 80 – 100 meters, with the trunk's circumference ranging from 124 cm – 270cm.

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Figure 2. The shape of the local Kerinci durian tree canopy

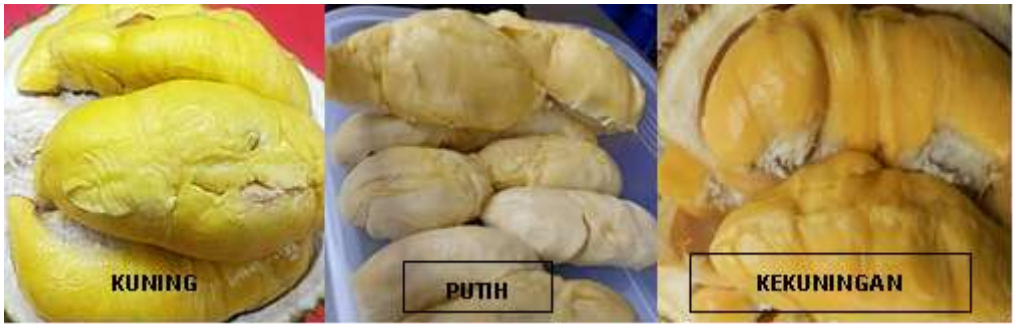

Figure 3. The color of the local Kerinci durian flesh

Figure 4. The shape of the local Kerinci durian fruit

CONCLUSION

Based on the results of research using survey methods and interviews with durian farmers in the Keliing Danau District, Danau Kerinci District, and Sitinjau Laut District, data was obtained that there are many types of local superior durian plants in the community and several other types need rescue because their number and existence have been hard to trace and very few and old. There are still many types of superior durian in these 3 sub-districts with superior characteristics that are not inferior to other types of durian in other regions. The types of durian that have been recorded are superior types that are already rare because there are very few. It is necessary to carry out a follow-up survey for other regions in Kerinci Regency by determining and establishing the expected superior criteria so that data and types of durians that need to be saved and developed to preserve each superior durian type are obtained for each region.

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