

Characterization Of Mobe Plant (*Artocarpus Lacucha* Buch-Ham) In Toba

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Abstract. Mobe is one of the typical Asian plants that is rare nowadays, unfortunately the information about mobe is very limited so it is very interesting to research and study. The purpose of this study was to determine the characteristics of the Mobe plant that grows around Toba Regency. The method used in this research is the roaming method around gardens and forests. Observations and identification were carried out by observing the roots, stems, leaves, flowers and fruits. Data were analyzed descriptively qualitatively. The results showed that Mobe grows in the highlands of Toba with the shape of a tall tree, oval and large leaves, the fruit of this Mobe is sour, round shape slightly jagged. From the results of the study, it can be concluded that the morphology of the Mobe plant has no effect on the same type of mobe in other areas.

Keywords: characterization, Mobe Plant, Toba

1. Introduction

The Mega Biodiversity Countries in the universe is flooded with biodiversity is Indonesia, has fertile soil and has abundant biodiversity such as fauna and flora. Indonesian flora is very diverse and spread throughout Indonesia, especially in the area of Lake Toba, North Sumatra. Lake Toba itself is the biggest lake in Indonesia which has an area of 1,130 km² and is bordered by the Toba Caldera area. Between Lake Toba, there is the Toba Caldera. Endemic plants are plants that only exist in a certain area or area and are not found in other areas, regions or regions can include islands, countries and certain places [1]. Plants are endemic if naturally they are not found in other areas. Plants that live in an archipelago tend to develop into endemic types or species due to geographic isolation. There are some endemic plants that cannot grow in other areas. One of the endemic plants found in the Toba Caldera Geopark area which is a very valuable biodiversity is the mobe plant.

Mobe tree, *Artocarpus lakoocha* Roxb is a very important plant species in tropical and subtropical areas, especially in Southeast Asia. Mobe is a plant that has many benefits and its fruit often plays a role as a secondary staple food and contributes to the livelihoods of some people in several areas in North Sumatra [2]. From the results of observations in the form of

field research and interviews with the community at that location, it was found that there was a lack of knowledge of the surrounding community about the benefits of the mobe plant, where people only knew how to use the fruit as an additional seasoning for the typical cuisine of the Toba region, namely arsik and naniura, without knowing the benefits of the plant parts. others, such as the leaves, so that this plant is now rare to find because people have started cutting it down to use it as firewood. Then there has been no non-textual book on the mobe plant (*Artocarpus lacucha* Buch-Ham) either in general or specifically in North Sumatra. As for other print media that made about the mobe plant (*Artocarpus lacucha* Buch-Ham) only briefly explained its morphology and benefits. The lack of books about mobe has an impact on the general public's knowledge about mobe plants.

2. Research Methods

This research was conducted using the exploratory method (exploratory survey). Determination of observation points using purposive sampling, so that the research location is divided into 4 location points, namely Haunatas village, Sitoluama village, Hutahaeaan village, in Balige sub-district namely Tambunan village, and Lumban Julu sub-district, Toba district.

3. Results and Discussion

Mobe Plant Classification

Medium to large evergreen tree, 10-20 m high, sometimes up to 29 m, with long tap root and tall tree. The crown is conical when the tree is young or growing in the shade and reaches a diameter of 30-100 cm at 110 years and is round and some what irregular when large. The trunk is not buttressed and is usually about 30-99 cm in diameter but can be wider in older tree. The bark is slightly scaly and grayish brown maybe dark gray in color. The branches spread from the bottom to the bottom of the trunk and also is inserted in angles ranging from 25-89°. The branches are cylindrical and mostly glabrous.



Fig 1 Mobe Tree

Leaf

Leaves oblong, oblong or elliptical; leaves on upper old branches tend to be more oval also leaves on young shoots more oval and narrow. The leaves are 5-20 cm long and 5-10 cm wide or above only the center of the widest part [3]. The lamina is dark green, stiff and glossy dark green in the picture 2 and pale green below, hairy at first but glabrous underneath. Pinnate veins with 4-9 pairs, midrib and leaf bones greenish white to pale greenish yellow. The leaves are pointed or blunt at the base and intact but irregularly shaped leaves can be seen on young plants. Lamina flat, wrinkled or with sides up. Leaf apex blunt, rounded or with short tips. From the one widest is point the leaves taper to the petiole which is dark green, 10 cm long and grooved on the side facing the stem. Leaves alternate on horizontal branches but tend to spiral on ascending branches with 2/5 phyllotaxis. There are stipules, ovate, about 7 cm long and 5 cm wide, deciduous leaves, leaving noticeable scars on the stems. [4]



Fig. 2 Mobe Leaf

Flower

Solitary inflorescences, both male and female, are produced separately on short of axillary is leaved twigs, either on tree trunks or on older branches. In some cases the plant can also be borne in the underground part of the tree, producing fruit that protrudes from the ground. The individual flowers are borne on an elongated axis and are grouped until racemoid inflorescences, also called spikes or heads. A large number of flowers are borne on the club-shaped rachis. The female spikes are found on the foot stalks while the male nails are on the toe stalks and also on the terminal shoots. Terminal buds, about 0.4 cm in diameter, produce only male spikes and also each shoot has six to eight leaves clustered at the end. One male inflorescence is formed per terminal bud in each flowering season [6]. There are two types of foot stalks: one type does not bear fruit, because it produces only male spines and the other type bears fruit, because it produces female spines. Unpadded foot stalks appear on branches or trunks early in the season. The plant appears as a yellow-green bud-like structure but later develops into leafy laterals like twigs. The peduncle is thicker than the terminal shoot, about 0.5 cm in diameter. This plant also contains fewer leaves (about three per foot stalk per flowering season). Male flowers begin to appear in the 4th week after appearance of the footstalk. Stalks with female spikes are much stronger than those with only male or male and female spikes. The male inflorescence along with the bud and leaf primordials are covered with stipules. As the buds grow larger, the stipules open to reveal new buds, leaves, and spikes. At emergence the male spikes are 2-3.2 cm long and about 1.3 cm wide but increase in size, assuming an oblong oval shape and reach 5-9.8 cm long and 2.1-3 cm wide. The male valve is tightly closed with small male flowers. Each flower is borne on a stalk with a green fleshy ring at the apex. [7] Male flowers can be sterile or fertile. The sterile male flowers have a dense perianth and the fertile male flowers are tubular and bi-lobed. Male flowers contain one long stamen (1-2 mm) and four anthers. It is enclosed in a green leathery tubular perianth that protrudes from the perianth tubes on the spike surface. The first stamens appear about 3-5 days after open and the entire the spike surface was covered with uncut yellow anther. The male spikes turn gradually black after it dehiscence, dueing to fungal growth, and fall off after about a week. The female inflorescence is 4-14.9 cm long and is usually find distal to the male inflorescence. Plants tend to be more cylindrical or oval than males. Otherwise, the plant resembles a male nail. Female inflorescences have thicker stalks than male inflorescences and oftenn have a fleshy rings in the base. Stamina spikes are produced in the axils of the terminal leaves and on the foot stalks that arise from the primary and second branches. During young, the spikes are covered by thick, leathery, fallen cuttings.[8]

Fruit

Mobe produces a large, light pink fleshy layer 10-15 cm long and 5-15 cm im diameter, cylindrical im shape like a pear amd hanging om a sturdy stalk. The fruit surface is warty with many protruding pyramidal parts. The imdividual flowers form imnto a fleshy chamber surrounding the seed, each pericarp amd seed becoming am imdividual fruit. The pericarp is white amd hard like wax. The fruit axis is the modified, slightly dome-shaped axis of ripe

inflorescences. It is stiff and slightly fleshy. The axis contains broad, elongated parenchyma and vascular elements as well as many laticifers that make this part of the fruit inedible. The free underside of the perianth becomes exclusively fleshy and edible; the fused middle and the free top form the fruit skin; it is the latter that forms the bottom come of the skin and these can differentiate into feathers, sclerenchymatous hypodermis, thick-walled ground tissue, vascular elements and fibrous sheaths and laticifers forming rigid and protective fruit cones.[9]

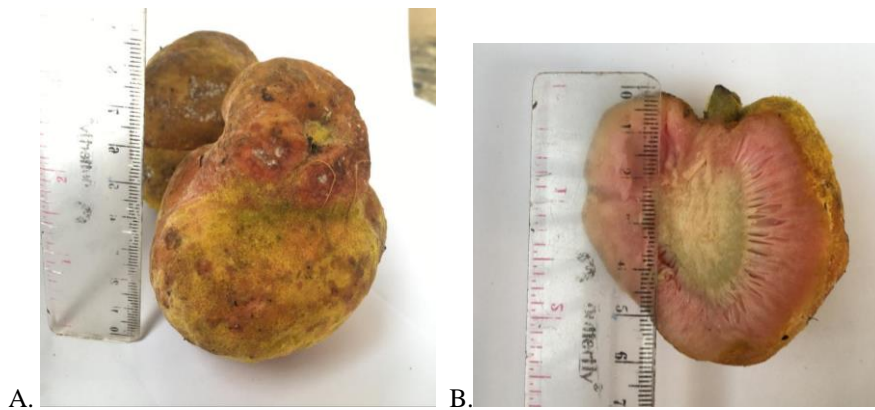


Fig. 3 Mobe Fruits

Seed

The seeds are hard and waxy, oval, oblong or oblong in shape. Each seed measures 1x2 cm and weighs 2-10 g. Many flowers on the inflorescence do not produce seeds; there are usually 10-60 seeds in each fruit syncarp. Being the testa was thinning and rough and rather thick, hard, parchment-like and wrinkled when it drying. The seed inner coat is a thin brownish membrane. The seed thickens at the hilum, which is located with a micropyle at the distal end or near the reticular tip of the seed.[11]



Fig. 4 Mobe Seed

Flesh cotyledon is very unbalanced, with it one cotyledon only about one on third to one on half the size of the other. The endosperm when present when it very small. The embryo has a superficial radicle (the basal lobe of the smaller cotyledons has not yet developed).[12]

4. Summary

The Toba area is one of the areas in Indonesia that is right for the growth of Mobe. Mobe is a plant that has many benefits and its fruit often plays a role as a secondary staple food and contributes to the livelihoods of some people in several areas in North Sumatra. Mobe has a tall and large tree, the leaves have a large elliptical shape and have many leaves, the fruit is haphazardly shaped, juicy, pink and sour taste

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