



CULTIVATION OF KARAMUNTING PLANTS (*MELASTOMA SP*) WITH VEGETATIVE PROPAGATION SHOOT CUTTINGS

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ABSTRACT

The Karamunting plants (*Melastoma malabatricum* one of the wild plants that can be used as a drug include: anti-diabetic, diarrhea, burns and abdominal pain, dysentery, cholera, hemorrhoids, infection and toothache, increasing platelet count, increasing fibrinogen levels. the color in the root can be used as a natural black coloring, it can also be used to discolor teeth and eyebrows. Caramunting leaves contain flavanoid compounds, steroids, tannins, quinones and elements of sodium, calcium and potassium. The anthocyanin extract of karamunting fruit has activity strong antioxidants, which are needed to prevent or reduce diseases caused by free radicals. The disease that is often associated with free radicals include premature aging, cancer and heart attacks. But karamunting is still classified as wild plants, because it has not been specifically cultivated. By because of that, it is necessary to study in addition to unt UK knows its spread by analyzing vegetation so that it can be known how much the population is in each growing area, but also the need for conservation by carrying out various cultivation measures because it is feared that they will become extinct due to conversion and land use. The study was conducted at Karang Harapan sub-district, West Tarakan sub-district, Kampung Enam village and East Tarakan sub-district Amal Beach. in March-July 2018. Based on the results of the application of karamunting cultivation techniques with shoot cuttings obtained by growth as part of the character of crop cultivation shows that in general the karamunting shoot cuttings with 5 (five) locations result in plant height growth and increased leaf formation from age 2 -4 after planting cuttings (plant height; 18.11cm, 30.87cm and 64.07cm; number of leaves 5.67, 6.60 and 9.00 strands) but experienced slow leaf length increase and small branch formation and roots (13.67cm, 13.87cm and 14.13 cm; 0.27, 0.55 and 1.07 branches; 13.60, 13.87 and 14.13 roots)

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INTRODUCTION

Kalimantan Island is an area that has a vast area of wetlands. Wetlands are land that is flooded by water. In these wetlands there is a lot of biodiversity. Various plants in the wetlands that live above them include plants that have the potential as medicinal ingredients. One plant that has the potential as a medicinal ingredient is caramunting. Karamunting can grow in various habitats and soil types. In some areas known as different names, inPekanbaru called Kalamunting, in North Sumatra known as Haramunting and in West Java known as Harendong Sabrang. Caramunting is used in some places as an ornamental plant because of its attractive flower color, but in some other places caramunting is considered a weed (bully plant) because of its very fast growth. Caramunting (*Rhodomyrtus tomentosa*) is one of the medicinal plants that is often used by the public. This plant belongs to the Myrtaceae family and has the international name Rosemyrle.

Karamunting plants (*Rhodomyrtus tomentosa*) is one of the biodiversity that must be developed because it has been reported as a plant that has several properties, including anti-diabetes, diarrhea, burns, and abdominal pain (Sutomo, 2010). The fruit is used as an antibacterial and diarrhea medication. Sari roots are used to treat heart disease, reduce pain after childbirth, diarrhea medication, skin infections and for the treatment of scars on the cornea of the eye. (Burkill, 1966 in Krisyanella, 2014). Caramunting leaf extract contains aleurone, tannin, catechol, alkaloids and saponins (Sutomo, 2012). According to Liu *et al.*, (2012), caramunting fruit contains 5 anthocyanin components, namely delphinidin-3-glucoside, cyanida-3-glucoside, peonidin-3-glucosyde, petunidin-3-glucoside and malvidin-3-glucoside. Karamunting grows wild in some places that get enough sunlight, such as on mountain slopes, bushes, fields that are not too arid, or in tourist areas as well as ornamental plants. This plant originated from South Asia and Southeast Asia and eventually spread to the tropics and subtropics to an altitude of 1650-2400 m. Shrubs, erect, 0, 5 - 4 m tall, many branched, scaly and have hair. Single, stemmed leaves, where they meet crossed. Round

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eggshell extends to oblong, pointed tip, rounded base, flat edge, surface has short hair that is not frequent and stiff until roughly felt with 3 curved leaf bones, 2-20 cm long, 0, 75 - 8, 5 width cm, the color is green. Compound inflorescence comes out at the end of the branch in the form of panicles with the number of flowers each panicle 4 - 8, crown 5, the color reddish purple. The ripe fruit will break and share on several sides, the color is reddish dark purple. Small seeds, brown color. The fruit can be consumed, the middle of young leaves can be used as vegetables or vegetables. Propagation by seeds. Caramunting plants are wild plants that live in patterns of colonization and growth externally in various conditions of land that is peat, unproductive and infertile. Live naturally and have never been cultivated by humans for various purposes. So far, humans only consume by taking directly various parts of the plant; both leaves, roots, flowers and fruit. When viewed from the many benefits of the existence of karamunting and based on consideration of the availability of land where habitus, growth and growth are carried out, cultivation is carried out. In terms of morphology and agronomy, caramunting can be bred in both regenerative and vegetative ways. It One way that vegetative propagation is easy to do is by cuttings. Based on readings from various literature and looking at the benefits and concerns about the scarcity of this caramunting, it is necessary to do an assessment to find out the distribution by analyzing vegetation so that it can know how much the population of this plant is. The results of this study are also one of the steps that we must take in efforts to preserve germplasm, as well as conducting breeding and vegetative tests on breeding. The shape or pattern of plant communities in a non-fixed area but changes according to the factors that influence it follows the general methods of plant population dynamics. The purpose of this study was to determine how and the results of vegetative propagation through shoot cuttings of caramunting plants in the area of North Kalimantan

Research Methods

Location and Time of Research

This research was planned in Tarakan, namely Kampung Enam sub-district, East Tarakan Sub-district from September to December 2016.

MATERIALS AND METHODS

Research Materials

The material used for the propagation technique of plant cuttings caramunting includes; planting media (soil + sand + chicken manure), plastic bags, paper bags. atonic, and caramunting plants from four sample locations

Research Methods

The methods used in the field in research for the propagation techniques of plant cuttings include: scissors cuttings, string, measuring cup, meter, nursery frame, sharlton net, hygrometer and thermometer.

Research Procedure

- Determination of sampling locations; Karang Harapan and Juata Lembah villages in West Tarakan District. Village Village Six and Amal Beach in Tarakan Timur District.
- Review of location and sampling

- Technical explanation of sampling in the field: equipment used and how to sample and package samples.
- Survey, selection & determination of locations as well as extracting top stem cuttings.
- Preparation of cuttings and shade media; Mixing media, filling polybags, making shade.
- Planting cuttings; Phase I was planted with 50 cuttings in soil media such as the initial soil (exsitu).
- Phase II was planted with 50 cuttings on soil planting media: sand: manure, Phase III was planted with 50 cuttings using atonic ZPT.
- Maintenance; Watering, replanting, weeding and piling
- Data retrieval; Percentage of live cuttings, number of roots, height of cuttings, number and area of new leaves formed, number of branches/buds and stem diameter

RESULTS AND DISCUSSION

Experiments of Karamunting cultivation with propagation by shoot cuttings. produce

Life Cuttings Percentage (%)

Location of material cutting	Planting stage cuttings		
	I (summer+not shaded)	II (summer+shaded)	III (rainy season+shaded)
L1	29,67	55,33	88,00
L2	30,33	55,00	86,00
L3	30,67	53,67	88,00
L4	31,67	57,00	91,00
L5	30,33	54,00	88,00
Sum	152,67	275,00	441,00
Average	30,53	55,00	88,20

Information: L1 = Karang Harapan, L2 = Juata Lembah, L3 = Kampung Enam, L4 = Amal Beach and L5 = Village One

Growth of Cuttings on Caramunting Plants in various parameters at 2 months

Location of material cutting	Plant High (cm)	Number of Leaves	Long Leaves	Number of Branches	Number of Roots
L1	15,33	5,33	13,33	0,33	13,00
L2	16,17	5,67	13,33	0,00	13,33
L3	17,70	6,00	14,67	0,33	14,67
L4	20,67	6,00	14,00	0,33	14,00
L5	20,67	5,33	13,00	0,33	13,00
Sum	90,54	28,33	68,33	1,32	68,00
Average	18,11	5,67	13,67	0,26	13,60

Information: L1 = Karang Harapan, L2 = Juata Lembah, L3 = Kampung Enam, L4 = Amal Beach and L5 = Village One

Growth Conditions The cuttings of caramunting plants are in various parameters at the age of 3 months

Location of material cutting	Plant High (cm)	Number of Leaves	Long Leaves	Number of Branches	Number of Roots
L1	30,67	6,33	13,33	0,67	13,33
L2	32,33	6,67	13,67	0,33	13,67
L3	32,33	7,00	14,67	0,33	14,67
L4	27,67	6,67	14,33	0,67	14,33
L5	31,33	6,33	13,33	0,67	13,33
Sum	154,33	33,00	69,33	2,67	69,33
Average	30,87	6,60	13,87	0,53	13,87

Information: L1 = Karang Harapan, L2 = Juata Lembah, L3 = Kampung Enam, L4 = Amal Beach and L5 = Village One

Growth Conditions The cuttings of caramunting plants are in various parameters at the age of 4 months

Location of material cutting	Plant High (cm)	Number of Leaves	Long Leaves	Number of Branches	Number of Roots
L1	64,00	9,00	13,67	1,00	13,67
L2	64,33	9,00	14,00	1,33	14,00
L3	64,33	9,33	14,67	0,67	14,67
L4	63,67	9,00	14,67	1,00	14,67
L5	64,00	8,67	13,67	1,33	13,67
Sum	320,33	45,00	70,68	5,33	70,68
Average	64,07	9,00	14,14	1,07	14,14

Information: L1 = Karang Harapan, L2 = Juata Lembah, L3 = Kampung Enam, L4 = Amal Beach and L5 = Village One

Caramunting plants are wild plants that live in patterns of colonization and growth externally in various conditions of land that is peat, unproductive and infertile. Live naturally and have never been cultivated by humans for various purposes. So far, humans only consume by taking directly various parts of the plant; both leaves, roots, flowers and fruit. When viewed from the many benefits of the existence of caramunting and based on consideration of the availability of land where habitus, growth and growth are carried out, cultivation is carried out. In terms of morphology and agronomy, caramunting can be bred in both regenerative and vegetative ways. It One way that vegetative propagation is easy to do is by cuttings.

The results of the implementation of 3 (three) stages of topping the caramunting were obtained successively cuttings; 30.33%, 55.01% and 64.17%. This shows that plants that are externally though can be done but have a small success rate and require practical knowledge, mastery of the microclimate and the timeliness of cutting and when planting cuttings. The initial situation of planting cuttings as much as 50 cuttings at each location takes the cuttings material that does not pay attention to the conditions above, resulting in a percentage of live cuttings far below the 50% success rate. In planting the third stage during cloudy conditions and continues to rain until the afternoon produces a percentage of cuttings live above 50%. This is presumably due to cold and wet conditions resulting in caramunting cuttings (trunked and leafy shoots) that have a texture and leaf structure that cannot stand to store water and dry easily can last enough time, so the tissue remains fresh and alive. The observations of growth as part of the character of plant cultivation showed that generally caramunting cuttings originating from 5 (five) locations produced growth in plant height and leaf.

CONCLUSION

Caramunting plants can be culturally cultivated, one of which is vegetative propagation through shoot cuttings. The success of pressing is influenced by the conditions when taking cuttings and planting material. Growth of caramunting plants from propagation of shoot cuttings has increased plant height and the formation of the number of tetatpi leaves is slow in increasing the number of branches and roots.

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