International Journal of Ecophysiology Vol. 05, No. 01, 2023 |1 – 4

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Internasional Journal of Ecophysiology

Bellucia pentamera Naudin Potency as a Natural resource of Medicine; Change its Status From Invasive to Useful plant

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Abstract. A Regulation from Indonesian Ministry for Environmental and Forestry, number P.94/MENLHK/SETJEN/KUM.1/12/2016 categorizes *Bellucia pentamera* Naudin is characterized as an invasive plant, that need a strict management and control. However, many recent studies show this species has many useful as source of traditional medicine recipes. characters that indicate the new status of *Bellucia pentamera* as useful medicinal plant. Green-immature fruit of Bellucia pentamera contains 2.210 mg/100 g of vitamin C, while the yellow-ripening one has higher, up to 3.500 mg/100 g of. Vitamin C is generally known as an effective threat for many symptoms. Therefore, it could be consider to put *Bellucia pentamera* as a potential plant for medicinal purpose. Organoleptic test of fruits sauté, found 60 % respondents said the fruit sauté is generally taste as sauté, and 40 % of them said rather delicious.

Keyword : [*Bellucia pentamera*, medicinal plant, distribution]

Received [4 January 2023] | Revised [8 February 2023] | Accepted [21 February 2023]

1. Introduction

Bellucia pentamera (Melastomataceae) is native to South America. Renner (1986) wrote that B *pentamera* and B *grossularioides* occur from southern Mexico to Bolivia and Mato Grosso, Brazil; cover a similar latitudinal span, but not reach the Guianas.This ese species were introduced to Indonesia via Bogor Botanic Gardens in early of 20th century. (de Kok et al. 2015) reported that it became an introduced weed in Harapan rainforest, Jambi province, Sumatra, Indonesia. B *pentamera* also was reported by Kudo et al., (2014) as an invasive species in Mt. Halimun-Salak National Park and Mt. Ged-Pangrango National Park, West Java province, Indonesia. Dahlia et al., (2016) found B *pentamera* is a kind of medium tree in Baning tourism forest area, Java. B *pentamera* also could be found in West Kalimantan. Renner (1986) wrote that B *pentamera* and B *grossularioides* occur from southern Mexico to Bolivia and Mato Grosso, Brazil; cover a similar latitudinal span, but not reach the Guianas.

Muhelni et al., (2016) studied on fruit feeding butterflies at a conservation forest of oil palm plantation in West Sumatra, and reported that B *pentamera* is a species found as habitat vegetation.

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DOI: 10.32734/ijoep.v5i1.11652
Journal Homepage: http://ijoep.usu.ac.id

Need a sentence describes the idea of this paragraph, i.e. Although B pentamera is mostly known as an invasive plant, recent research show it can be useful for medicinal purposes. Laboratory test of methanol-water fraction leaves extract on Eschericia *coli* and Staphylococcus *aureus* showed the inhibition growth with Minimum Inhibitory Concentration about 125 µg/ml for E *coli* and 500 µg/ml for S *aureus* (Salni and Sari, 2017), but the crude extract of aerial part of B *grossularioides* has no effect on S *aureus*, *Candida albicans,* and C *krusei*. Furthermore, Slik (2016) wrote the usage of fresh fruits as medicinal plant on antihelmintic function against worms. It is explained that these plants are cultivated and invasive in tropical Asia.

According to Sossonik et al., (2006) in European Journal of Clinical Nutrition, vitamin C is significantly reduce the frequency of the common cold. It is mean if the fruits of B *pentamera* have vitamin C content, it could be used as natural medicine for cold cases too.

Based on the above information, it is interesting to find out information wether B *pentamera* was distributed wherever, minimally in South Sumatra province, and wether its has vitamin C content of their fruits and furthermore how the respondents response to fruit sauté.

2. Material and Methods

Investigation on spatial distribution of B *pentamera* was conducted in June-July 2017. Site visit record, student homework, and reportation of the alumnies of Biology Department, Faculty of Mathematic and Natural Science, Sriwijaya University via social media group were tabulated into table of distribution. Documentation by photograph was done too. Furthermore, the vitamin C content of green immature fruits and yellow ripening fruits were determined by titration methods at Genetics and Biotechnology Laboratory, Biology Department, Faculty of Mathematic and Natural Science, Sriwijaya University. Three volume replication were done for these measurement. Last but not least, organoleptic test was done too, to ten respondent, they were lecturer (8 persons), post graduated student (1 person) and department staff (1 person). Five categories were requested from respondents; wether B *pentamera* fruit sauted is very delicious, rather delicious, just like general sauté daily, quite not tasty or even not delicious.

3. Results and Discussion

Data collected on B *pentamera* distribution show that the plant was distributed at some residence of South Sumatra province as could be seen at the below pictures.

Figure 1. B *pentamera* seedling in Pal

Figure 2. Fruit and flower, in Indralaya

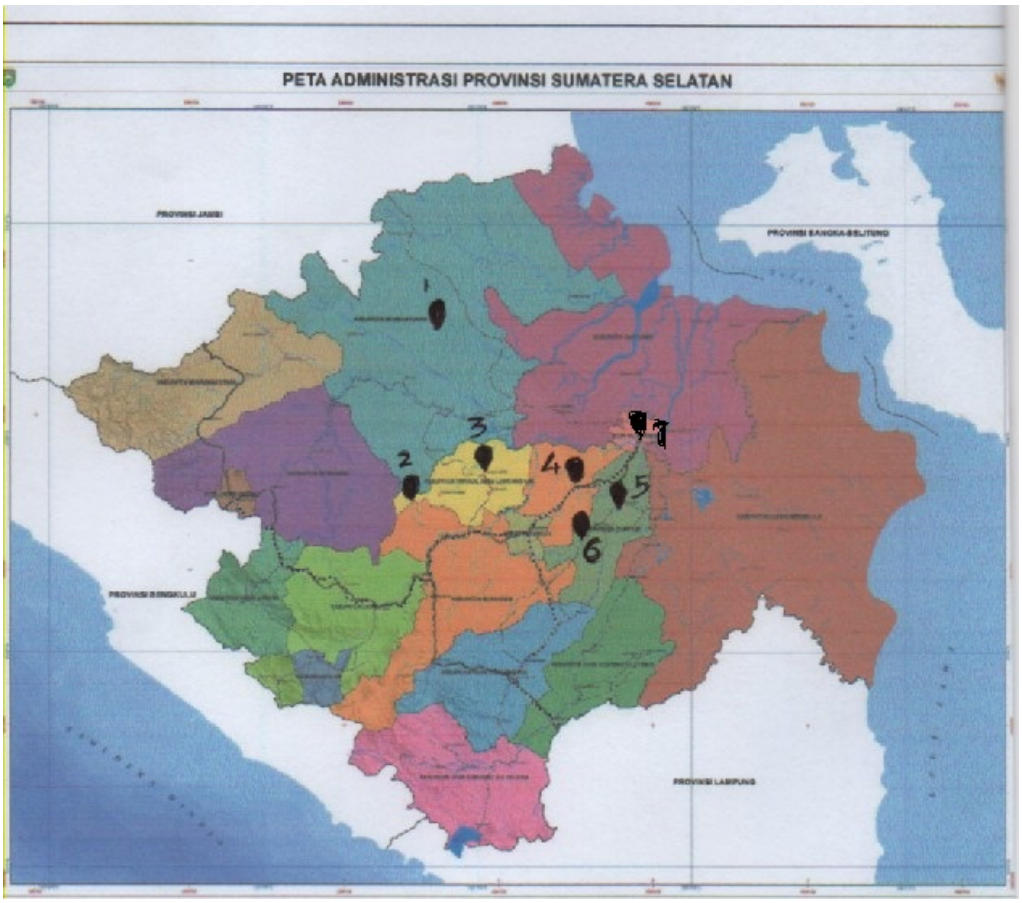

Figure 3. Map of B *pentamera* distribution in South Sumatra province.

1. Dangku forest conservation, Musi Banyuasin residence
2. Talang Ubi district, Pali residence
3. Penukal district, Pali residence
4. Gelumbang district, Muara Enim residence
5. Indralaya district, Ogan Ilir residence
6. Payaraman district, Ogan Ilir residence
7. Palembang City, around SMB II airport area

Figure 4. Fruits serve

Figure 5. B *pentamera* fruit sauté

Vitamin C content Our analysis by titration method show that green immature fruits of *B. pentamera* contains 2.210 mg/100 g of vitamin C, while the yellow ripening fruit one is up to 3.550 mg/100 g. This green-immature value was higher than than fruit of Blueberry (*Vaccinium* sp) about 1.3 mg/100 g; Fig ((*Ficus carica*) about 2 mg/100 g; Kiwano (*Cucumis metuliferus*) about 0.5 mg/100g ; Medlar (*Mespilus germanica*) about 0.3 mg/100 g; and Loquat (Eriobatrya japonica) about 1 mg/ 100 g (USDA Nutrient database cit. Anonymous, 2001). The vitamin C on the ripening ones were higher than Peach (*(Prunus persica*) about 3 mg/100 g. However,

these result of vitamin C were still lower than Apple, Grape, Lemon, and Java plum and Tangerine.

Table 1. Vitamin C content of fruits (mg/100 g)

	Immature fruits	Ripening fruits
Vitamin C	2.210	3.550

Vitamin C is well known to significantly reduce the frequency of the common cold (Sossonik et al., 2006). As fruits of B *pentamera* have a high vitamin C content, it could be used as natural medicine for cold cases. Slik (2016) also noted that fruits of this plant were effective for antihelmintic usage.

Organoleptic test Organoleptic test found that 60 % respondents said fruit sauté of B. pentamera has general taste as a usual sauté usual, while other 40 % respondents said good taste or delicious. Most of respondents said that the taste was sour, just like "sayur asem" of Indonesian daily vegetable sauté food. Its propose to analyze the other acid content of fruit; not ascorbic acid only.

4. Conclusion

B *pentamera* is distributed around South Sumatra province, were recorded at Palembang city (around airport area), Ogan Ilir(Tanjung Lalang, Indralaya, and Tanjung Batu), Muara Enim (Talang Taling), Penukal Abab Lematang Ilir(Penukal, Talang Ubi), and Banyuasin(rambang dangku) regency. It is found 2.210 mg/100 g of green immature fruits, and 3.550 mg/100 g of yellow ripening fruit of vitamin C. At last, organoleptic test of fruits sauté, found 60 % respondents said the fruit sauté is generally taste as sauté, and 40 % of them said rather delicious.

Acknowledegement

We thank Muhammad Iqbal, Sahira Wirda, Andi Mulfa, Atia Febriana, and Rendra Bayu for distribution data of B *pentamera* trees in South Sumatra province.

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