

Consumer preferences

by Sundari S

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3

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2 Consumer Preferences of Local Durian (*Durio zibethinus* Murr.) In West Halmahera Island Based on Agronomic Characteristics

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Abstract. The local durian scattered in the archipelago is a genetic resource that can be used as a fruit icon of the region. West Halmahera Island, especially Jailolo district, is a center of durian fruit production in North Maluku. The purpose of this research is to describe consumer preferences for local durian in West Halmahera Island based on agronomic characteristics. This research was conducted from June to September 2016 by survey method with purposive sampling. The instruments used were questionnaire and interview guides. Respondents were 60 people consisting of traders, garden owners and consumers (durian buyers: housewives, students, civil servants and self-employed). The communities on West Halmahera Island have been trending to a preference for local durian fruit with agronomic characteristics such as: small fruit size, brownish green color, round shape, short and sparse, and spines. Other agronomic characteristics include: yellow flesh character, sweet taste, strong aroma, soft texture, thick flesh, less fibrous, and small seeds until deflated. The consumer preferences for local durian can be used as initial data of a national standard durian breeding program.

Keywords: agronomy character, consumers, local durian, preferences.

INTRODUCTION

Science learning is among the most important aspects for students of all ages because it is the basis of Durian is a tropical fruit that has an important economic value and has become a favorite in the community in Indonesia.¹ The conservation and development of durian fruit commodities need to get attention, so as to suppress the amount of imported fruit from abroad. A durian commodity development program should not only pay attention to quantitative aspects but also quality according to a national standard of SNI durian.³ A national durian SNI standardization program will be able to build the image of durian in the archipelago.⁴

The West Halmahera Island, especially the Jailolo subdistrict is one of the centers of the production of durian in North Maluku, besides the islands of Ternate and Tidore. The Jailolo district has high productivity every year.² The local Durian on West Halmahera Island grows naturally (it is a wild plant) and comes from seeds with hereditary ownership. Durian trees are grown in conventional gardens and community yards. At the time of harvest, durian fruit in the durian growing centers are very abundant in the three islands. Until now, the durian production on the islands of Ternate, Tidore and Jailolo are still widely consumed in the form of fresh fruit.

At this time, the availability of durian for consumption nationally, based on the calculation of Food Balance Sheet (NBM), in the period 1993–2013 shows an indication of improvement. In 1993 the availability of durian for consumption per capita was 0.82 kg/year, and in 2013 it was 2.76 kg/capita/year. The highest availability of durian for consumption was achieved in 2011, 3.39 kg/capita/year. The durian for consumption is mostly for foodstuffs in the form of fresh fruit with a percentage of up to 90%, while the rest is scattered.²

Survey results show that people in North Maluku with various ethnicities have the tendency to like the durian fruit from their place of origin.⁶ The Jailolo community during the durian harvest season prefers the durian of Jailolo

to that from the Tidore or Ternate, and conversely. Outside the local durian harvest season, the people in North Maluku sometimes consume imported durian at a fairly expensive price. This attitude of the local wisdom, loving local products in the community in North Maluku, provides opportunities for agribusiness and local durian breeding to produce quality fruit products.

This study aims to describe the profile of consumer preferences for local durian in West Halmahera Island, especially the Jailolo subdistrict, based on consumer tastes of an agronomical character. This research is expected to contribute to the Idiotype Indonesian national durian model in order to improve the quality and quantity of durian national fruit through the recommendation of local durian varieties that are feasible to be developed based on the national durian idiotype.

EXPERIMENTAL DESIGN

The research on the consumer preferences for local durian in West Halmahera Island (Jailolo) was conducted by the survey and interview method. The survey was conducted from June until September 2016 in six durian producing villages. The selection of this location is assumed to represent variations of local durian characters, as all locations are local durian centers that are hereditary and multivarietal. Two special locations, namely the Gamalama and Tapak markets on the island of Ternate, have as their main purpose durian marketing from the production centers in North Maluku.

The sampling technique employed (purposive random sampling) used 60 respondents. The respondents consisted of traders, garden owners and consumers (durian buyers: housewives, students, students, civil servants and self-employed). The consumer preferences are the main target of the information obtained through this survey, so in addition to the general consumers, the fruit traders and durian growers are important respondents because they are parties directly related to consumers and durian fruit.

The information to be studied from the respondents consisted of 11 agronomic characteristics of durian fruit, namely: fruit shape, fruit size, fruit skin color, thorn length, aroma, meat color, meat texture, meat thickness, seed size, and fruit flavor. The list of information to be extracted is then arranged in the form of a closed questionnaire with each character divided into categories based on the general circumstances that are common to the consumer's attention in choosing one criterion of durian, namely the form of fruit consisting of round, ovoid, oval, and heart categories; fruit sizes consist of **small** (< 1.5 kg), **medium** (1.6–2.5 kg), **large** (2.6–3.5 kg), and **extra large** (> 3.6 kg) categories; **skin color** consists of the categories of light green, dark green, green brown, and dark brown; the length of the spine consists of a category not spiny to very short (< 5 mm), short (5–10 mm), medium (11–15 mm), and long (> 15 mm); odor consists of strong, medium, soft, and odorless categories; the color of the meat consists of white–beige, light yellow, dark yellow, and red; the texture of the meat consists of the categories of soft wet, soft dry, creamy, and fibrous; thickness of meat is classified into the categories thick (> 10 mm), medium (5–10 mm), and thin (<5 mm); seed size consists of the categories **large** (> 25 g), **medium** (16–25 g), **small** (<16 g), and deflated; as well as the taste of fruit consisting of sweet-bitter, sweet-legit, sweet-medium, and less-sweet.⁴ The data were analyzed descriptively to explain the number of respondents who chose a durian character category depicted using tables and histograms. The determination of the dominance of one category of character against another category is based on the percentage of respondents' preference.

RESULTS AND DISCUSSION

Table 1 presents a description of the local community respondents on West Halmahera Island based on functional status, consisting of civil servants, entrepreneurs, traders, gardeners and students /housewives as well as housewives.

TABLE 1. Description of Respondents

Group of Respondent	Number of Respondents
Civil Servants (Lecturers, Teachers, Local Government, BUMN)	18
Entrepreneur	10
Durian Traders	5
The owner of the garden	9
Student	9
Housewife	9
Total	60

These respondents included 18 civil servants, consisting of lecturers, teachers, civil servants and employees in state enterprises (Bank and ASDL and DLLJR), 10 self-employed respondents, consisting of employees /employees, 5 durian traders from the 3 islands, 9 durian gardeners from the 3 islands, 9 students, and 9 housewives. The local people who were the respondents in this study were the people who are to be met with in the marketing of durian and dikianun durian. The number of respondents of the employee group is more than the other respondent groups because the employee group is the biggest group of consumers found in Gamalama market and the location of the durian sale site in Ternate.

The agronomic characteristics of fruit size, thorn density, aroma and color generally vary between locations. Different tastes caused each attribute of an agronomic character has a meaning or relationship to different socio-economic attributes in each community group. This distinction may also apply to certain strata of society even when within one social group.^{5,6} The description of consumer's preference level for durian fruit is based on the agronomic characteristics of fruit shape, fruit size, fruit skin color, thorn length, aroma, meat color, meat texture, meat thickness, seed size, and fruit flavor. The quantitative analysis of the consumer preferences is based on the percentage values of the respondents' answers (Table 2).

TABLE 2. Consumer Preferences of Fruit local durian from Jailolo

Agronomy Character	Consumer Preference (%)
Fruit shape:	
<i>Round</i>	32.2
<i>Oval</i>	16.1
<i>Oblong</i>	19.3
<i>Heart-shape</i> ¹	32.2
Fruit size:	
<i>(Small) ≤ 1,5 kg</i>	35.8
<i>(Medium) 1,6 – 2,5 kg</i>	32.2
<i>(Large) 2,6 – 3,5 kg</i>	32.2
<i>(Extra large) ≥ 3,6 kg</i>	0
Skin color:	
<i>(Light green)</i>	0
<i>(Dark green)</i>	48.3
<i>(Green brownish)</i>	25.3
<i>(Dark brown)</i>	25.3
Thorn length:	
¹ <i>(Thornless to very short) <5mm</i>	0
<i>(Short) 5-10mm</i>	29.0
<i>(Medium) 11-15mm</i>	35.4
<i>(Long) >15mm</i>	35.4
(Odor):	
<i>(Strong)</i>	51.6
<i>(Medium)</i>	48.3
<i>(Soft)</i>	0
<i>(Odorless)</i>	0
Flesh color:	
<i>(White to cream)</i>	25.8
<i>(Light yellow)</i>	48.3
<i>(Dark yellow)</i>	22.5
<i>(Red)</i>	0
Flesh texture:	
¹ <i>(Soft wet)</i>	32.2
<i>(Soft dry/firm)</i>	67.7
<i>(Creamy)</i>	0
<i>(Fibery)</i>	0

Agronomy Character	Consumer Preference (%)
1	
(Flesh thickness):	
(Thick) > 10mm	83.8
(Medium) 5-10mm	16.1
(Thin) < 5mm	0
(Seed size) :	
(Large) >25 g	0
(Medium) 16-25 g	0
(Small) <16 g	83.8
(Wrinkle)	16.1
(Taste):	
(Sweet bitter)	0
(Very sweet)	9.6
(Sweet)	90.3
(Sweetless)	0

Preferences (tastes) of the consumer for the durian fruit agronomic characteristics in general differ between groups of respondents. The different agronomic characteristics among the respondent groups are 1) the size of the fruit is the characteristic that became the first attribute of the buyer concerned with durian, fruit size associated with price. Consumers who have large incomes have higher purchasing power with which to buy large durian; it is otherwise for consumers who have enough income and want to eat durian, who will choose a relatively small durian, something that is in line with the results of Santoso et al.⁷

The most favored and the same agronomic characteristic of the respondents in each location is the agronomic characteristic of the yellow flesh color, the sweetness of the legit, and the texture of the pulen (dry), with thick flesh and deflated seed. The agronomic characteristics of fruit size, thorn density, aroma and color generally differ among respondents in each location. Different tastes are caused because each attribute of agronomic character has a meaning or relationship to different socio-economic attributes in each community group. This distinction may also apply to certain strata of society even within the same social group.^{7,8} In the Jailolo community there are groups who like the durian to be of small size because it has a different taste than other durian types in general, and this particular kind of durian is only found in Jailolo. The durian in question is the durian (Jailolo red).

Aroma is one of the characteristics of durian which appeals to consumers when buying durian, but not all respondent like a strong and stinging aroma, there is a strong liking of a strong aroma but there is also a dislike, even amounting to a dizziness, involved with the aroma of durian. The aroma can be used as an indicator of the durian's maturity, those respondents who really like durian in general like a strong aroma. The agronomic characteristics of the density of the thorns and the color of the fruit fiber is less of a consumer's consideration in choosing the durian fruit to be purchased. Some respondents assume that the density and length of the spines correlate with the number of juring, while the color of the green fruit skin signifies that the new fruit is newly picked, commonly receiving less attention in determining the target of buying durian. The roundness of a fruit, or its ovality, is related to the fact that there are those who like the shape to be round because it is linked to the fruit's being of medium size. But there are those who like an oval shape because the shape tends to be oval with large size. Based on the results of the survey, it turns out that thick and soft textured flesh, dry, and a sweet taste of legit are the characteristics the most preferred by consumers (Fig. 1).

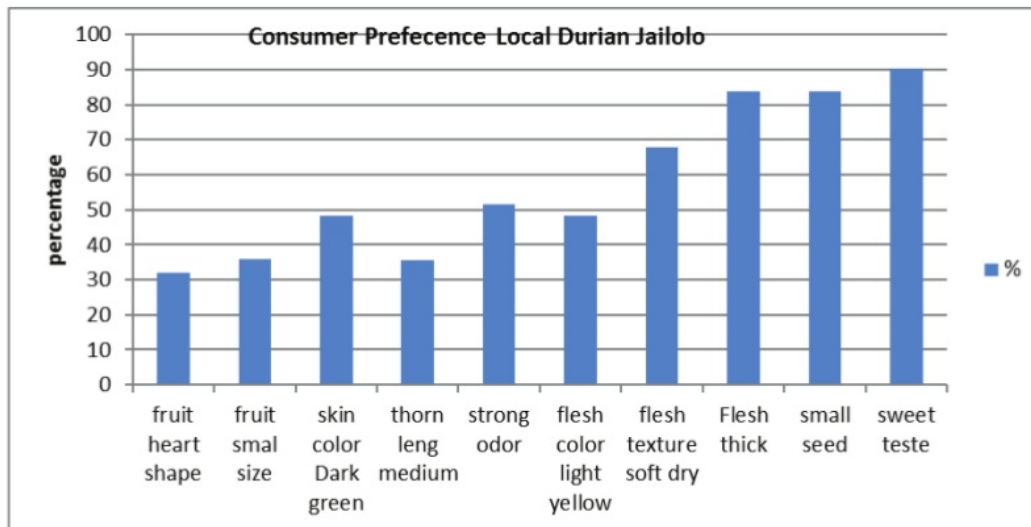


FIGURE 1. Percentage of respondents to agronomic character of the local durian Jailolo.

Those in the Jailolo community in West Halmahera Island who responded to this study chose the following agronomic characteristics: round and heart shaped (32.2%). The level of consumer preference for each parameter of agronomic character of the local durian jailolo is calculated based on percentage response of 60 respondents. For a round fruit shape there are 32.2% of respondents who like the shape of round fruit. In the form of fruits, there are also 32.2% of respondents. The remaining percentages of responses is the preferred level of response to other fruit forms. Furthermore, there was obtained for small fruit size (35.5%), dark green skin color (48.3%), moderate thorn length (35.4%), strong aroma (51.6%), light yellow /butter (48.3%), pulen meat texture (67.7%), thick meat (83.8%), seed size small to deflated (83.3%), and sweet fruit flavor legit (90.3%). These characteristics were found for the local durian with the "Yang," a local name used by the Jailolo community. This kind of durian is found in Golo and Worat villages (Fig. 2).



FIGURE 2. Agronomy character of 'Yang' local name durian from Jailolo.

SUMMARY

The durian consumers in the Jailolo community generally have a preference for the durian of local Jailolo origin, with the agronomic characteristics of small and medium fruit size, dark green color, heart shape, medium and tight spines, yellow flesh, sweet taste, stinging aroma, dry texture (pulen), thick meat, less fibrous, and small seeds until deflated.

2

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Consumer preferences

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