

Arjuna Coffee Organoleptic Test

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Abstract

The organoleptic test of coffee grown in the Toyomarto area aims to determine consumer preferences for coffee grown on the slopes of Mount Arjuna. The two types of coffee that are most in demand in the global market are Arabica and Robusta. When viewed from the level of consumption, around 70% of the world's population are consumers of Arabica coffee, which has a mild and aromatic taste. Meanwhile, the remaining 30% of the world's population are consumers of Robusta coffee, which has a bitter taste and 50% higher caffeine content than Arabica coffee. There is another type that is grown in Toyomarto, namely the Liberica type. Toyomarto Village, which is located in Singosari District, Malang Regency, is located at an altitude of 700-1200 masl. has a fertile soil that makes a specific and unique taste in the coffee that grows around it. Organoleptic testing has been carried out at 2 different locations. The panelists really liked the sour taste of Arabica coffee and the bitter taste of Robusta coffee. Meanwhile, Liberica coffee was less liked by the panelists.

Keywords: organoleptic test, Arabica coffee, Robusta coffee, Liberica coffee



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INTRODUCTION

Coffee is a plant that thrives in tropical-sub-tropical regions. Indonesia is in a tropical climate so coffee plants can grow well. One of the areas suitable for coffee cultivation is the slopes of Mount Arjuna, East Java. Mount Arjuna is under the management of the Raden Soerjo Grand Forest Park, which is surrounded by Batu City, Malang Regency, and Pasuruan Regency (Direktur Jenderal Perkebunan, 2018). The two types of coffee that are most in demand in the global market are Arabica and Robusta. When viewed from the level of consumption, around 70% of the world's population are consumers of Arabica coffee, which has a mild and aromatic taste. While the remaining 30% of the world's population are consumers of robusta coffee, which has a bitter taste and 50% higher caffeine content than Arabica coffee (Birdieni, 2018; Hendri, Yusmanizar and Maulana, 2013). In addition, another type of coffee is Liberica. According to Pimenta (2009) organoleptic testing is a test based on the sensing process. Sensing is defined as a physio-psychological process, namely awareness or the introduction of the senses to the properties of objects due to the stimuli received by the senses originating from the object. Panelists were asked for their personal responses about their likes or dislikes (dislikes). In addition to the panelists expressed a happy response, like it or the opposite, they also expressed their level of preference. These levels of preference are called the hedonic scale. Arabica, Robusta and Liberica coffees have their own markets and each person will have a different level of preference (Mulato, 2002).

LITERATURE REVIEW

The Arjuna mountain area also has a famous type of coffee, namely Arjuna coffee. Most of the coffee plants found in the Arjuna mountain forest area are arabica coffee types while the rest are robusta coffee. Arjuna coffee is grown under stands including pine and mahogany but mostly covered by pine by 90% and mahogany trees around 10% (Direktur Jenderal Perkebunan, 2018). Processing of coffee before it can be drunk goes through a long process, namely from harvesting ripe coffee beans either by machine or by hand, then processing the coffee beans and drying them before becoming coffee logs. The next process is roasting with varying degrees. After roasting, the coffee beans are ground or ground into coffee powder before the coffee can be drunk (Oktadina and Drefin, 2013). To determine the quality of coffee, it is necessary to do a taste test which is usually carried out by experts, a taste test is also called an organoleptic test (Permentan RI No. 50, 2012).

Measurement of the value / level of impression, awareness and attitude is called subjective measurement or subjective assessment. It is called a subjective assessment because the results of the assessment or

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measurement are largely determined by the perpetrator or the person taking the measurement. Stimuli that can be sensed can be mechanical (pressure, puncture), physical (cold, heat, light, color), chemical properties (smell, aroma, taste). When the sense organs receive a stimulus, before awareness occurs, the process is physiological, that is, it starts at the receptor and is transmitted to the sensory nervous system or reception nerves. The sensing mechanism in a nutshell is initiated by the reception of stimuli (stimulus) by special sensitive cells in the senses. Furthermore, reactions occur in sensitive cells to form chemical energy (Wijayani and Muafi, 2016).

According to Pimenta (2009), the aroma of coffee arises as a result of volatile compounds caught by the human sense of smell. Volatile compounds that affect the aroma of roasted coffee are formed from the Maillard reaction or non-enzymatic browning reaction, amino acid degradation, sugar degradation, and degradation of phenolic compounds. Besides being influenced by the roasting process, Ummah (2012) revealed that coffee has a very sharp and distinctive aroma, coupled with the heating or roasting process, it causes color changes and forms a more specific aroma. The taste of the organoleptic test showed that the average coffee taste was less bitter to bitter. Oktadina and Drefin (2013) revealed that the roasting process forms the distinctive aroma and taste of coffee due to heat treatment. So the longer the roasting time, the better the coffee taste will be. Most of the panelists said that in Arabica coffee, coffee was more likely to taste sour and less bitter. On the other hand, Robusta coffee tends to taste bitter and and less sour.

RESEARCH METHODOLOGY

The research object area is Toyomarto, Singosari District, Malang Regency, East Java. The research area has an altitude of 700-1400 meters above sea level. The method used in this study uses a qualitative descriptive method. Qualitative researchers emphasize process and meaning rather than quantity, frequency or intensity (which can be measured mathematically), but researchers will also conduct

descriptive statistical analysis in the form of frequency distribution or percentage to complete the data analysis.

The preference test is also known as the hedonic test. Panelists were asked for their personal responses about their likes or dislikes (dislikes). In addition to the panelists expressed a happy response, like it or the opposite, they also expressed their level of preference. These levels of preference are called the hedonic scale. For example, in terms of "like" it can have a hedonic scale such as: very much like, very like, like, somewhat like. On the other hand, if the response "does not like" can have a hedonic scale such as likes and somewhat likes, there is a response that is referred to as neutral, which is neither like nor dislike (neither like nor dislike). The scores referred to are as follows:

Table 1. Seven point of Hedonic Scale for Sensory Evaluation of Toyomarto Coffee

Grade	Score
Like extremely	7
Like very much	6
Like moderately	5
Like slightly	4
Dislike slightly	3
Dislike moderately	2
Dislike very much	1

As for the organoleptic test using 5 criteria, namely:

1. Fragrance that appears when the coffee beans are ground and not yet brewed.
2. Aroma or fragrance that appears when coffee beans are brewed with water.
3. Body or liquid coffee texture when in the mouth touches the tongue and upper wall of the mouth.
4. Acidity or "fruit acid" character that leads us to various the character of the coffee taste that is sipped.
5. After taste or traces of taste that impress us when drinking coffee even though we haven't had a sip.

FINDING AND DISCUSSION

Panelists were asked for their personal responses about their likes or dislikes. In addition to the panelists expressed a response, like it or the opposite, they also expressed their level of preference. These levels of preference are called the hedonic scale. For example, in terms of "like" it can have a hedonic scale such as: like very much like, like slightly, or dislike very much, etc. The results of the taste test are as follows:

Table 2. Organoleptic test of 3 types of Arjuna Coffee (%)

Criteria of Organoleptic test	Hedonic Scale						
	1	2	3	4	5	6	7
	Dislike very much	Dislike moderatly	Dislike slightly	Like slightly	Like moderatly	Like very much	Like extremely
ARABICA	Percentage (%)						
Sour							100
Bitter	5	5	80	10			
Fruity		5	5	40	50		
Salty	60	10	10	10	10		
Fragrance				10	10	60	20
Texture				10	50	30	10
ROBUSTA	Percentage (%)						
Sour	20	10	30	40			
Bitter							100
Fruity				50	50		
Salty					70	30	
Fragrance						90	10
Texture			80	20			
LIBERICA	Percentage (%)						
Sour			90	10			
Bitter			90	10			
Fruity			90	10			
Salty			40	60			
Fragrance			40	60			
Texture		40	60				

Notes: the data was observed descriptively from 50 panelists at 2 locations.

From table 2, it can be seen that the sour taste of Arabica coffee grown in Toyomarto was liked extremely by 100% of the panelists, while there was a slightly sour taste preferred, i.e. 40% dislike slightly the bitter taste, 50% likes the fruity taste and 60% dislike the salty taste very much. While the aroma that appears when the Arabica coffee was freshly brewed and inhaled, 60% likes it very much and 20% extremely likes it, 10% likes moderately and likes slightly. The liquid coffee texture is the texture that is felt when the coffee is in the mouth and touches the tongue and the upper wall of the mouth. Arabica coffee was liked by 50% of the panelists, 30% liked it very much and 10% liked it extremely, while 10% liked it slightly.

Robusta coffee which is the largest variety that grows in Toyomarto, 100% of the panelists like extremely their bitter taste, 80% dislike slightly the sour taste, 50% likes the fruity taste and 50% likes it slightly. While 70% of panelists like the salty taste, 30% like it very much. The aroma that appears when the coffee was freshly brewed and inhaled, 90% like it very much and 10% extremely like it. 80% of the panelists disliked slightly the liquid texture of Robusta coffee, while 20% slightly like it.

Liberica coffee is rarely grown in Toyomarto, but to meet certain people's tastes, Liberica coffee is cultivated in several places. On average, the panelists did not like the sour, bitter, and fruity taste as much as 90%, while 10% slightly liked it. The salty taste appears in this Liberica coffee and was slightly liked by the panelists as much as 60%, while 40% is slightly disliked. 60% of the panelists liked the fragrance and 40% disliked it somewhat. The texture of the liquid coffee is slightly disliked by 60% of the panelists, while 40% did not like it.

The two most popular varieties of coffee in the market are Arabica and Robusta. When viewed from the level of preference of the panelists, all of them liked the sour taste of Arabica coffee and the bitter taste of Robusta. According to Pimenta (2009), the aroma of coffee arises as a result of volatile compounds caught by the human sense of smell. Volatile compounds that affect the aroma of roasted coffee are formed from the Maillard reaction or non-enzymatic browning reaction, amino acid degradation, sugar degradation, and degradation of phenolic compounds. Besides being influenced by the roasting process, Ummah (2012) revealed that coffee has a very sharp and distinctive aroma. The heating or roasting process causes a color change and forms a more specific aroma. The taste of the organoleptic test showed that the average coffee taste was less bitter than bitter.

Oktadina (2013) revealed that the roasting process forms coffee's distinctive aroma and taste due to heat treatment. So the longer the roasting time, the better the coffee taste will be. Most of the panelists said that in Arabica coffee, coffee was more likely to taste sour and less bitter. The reaction or impression caused by the stimulus can be in the form of an attitude to approach or stay away, liking or disliking the object that causes the stimulus. Awareness, impressions, and attitudes to stimuli are psychological reactions or subjective reactions. Measurement of the value/level of impression, awareness, and attitude is called subjective measurement or subjective assessment. It is called a subjective assessment because the results of the assessment or measurement are largely determined by the perpetrator or the person taking the measurement. Stimuli that can be sensed can be mechanical (pressure, puncture), physical (cold, heat, light, color), chemical properties (smell, aroma, taste). When the sense organs receive a stimulus before awareness occurs, the process is physiological, that is, it begins at the receptor and is transmitted to the sensory nervous system or reception nerves

CONCLUSION AND FURTHER RESEARCH

The panelists like very much the sour taste of Arabica coffee and the bitter taste of Robusta coffee. Liberica coffee was less preferred by the panelists.

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