

Research Article

Organoleptic Analysis of Egyptian Martabak with the Addition of Betung Bamboo Shoots (*Dendrocalamus asper*)

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Betung bamboo shoots (*Dendrocalamus asper*) is a plant derived from the shoots of bamboo betung processed into additional stuffing in Egyptian martabak. Betung bamboo shoots contain 59 gm of phosphorus and 13 mg of calcium, so they are good sources of natural nutrients for the body. The purpose of the study was to determine the organoleptic characteristics of the Egyptian martabak from bamboo betung shoots and to determine consumer acceptance of the Egyptian martabak from bamboo betung shoots. This study used an experimental method with three treatments and 3 repetitions using a completely randomized design (CRD). Data collection techniques used observation tests conducted by 5 sources, and acceptance tests were carried out by 30 consumers. The results of the observation test were analyzed by calculating the average value obtained from the sources, while the acceptance test was analyzed using a one-way analysis of variance (ANOVA). The results of the observation by the interviewees chose the Egyptian martabak, bamboo shoots, treatment 3 with the code MM3 with the addition of 70 gm of bamboo shoots, the average value was 23.31. The results of the research acceptance test consumers like the color, texture, taste of the Egyptian martabak bamboo shoots betung treatment 1 (MM1) with the addition of 50 gm of bamboo shoots (25%), for the aroma consumers like Egyptian martabak bamboo betung shoots treatment 2 (MM2) with the addition of bamboo shoots bamboo betung 60 gm (30%). The resource person chose the Egyptian martabak, bamboo shoots, treatment 3 with the code MM3 in terms of color, aroma, texture, and taste. Consumers choose the Egyptian martabak bamboo shoots with treatment 1 (MM1) in terms of color, texture, and taste. Meanwhile, in terms of aroma, consumers chose the Egyptian martabak, bamboo shoots, and treatment 2 (MM2).

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1. INTRODUCTION

Throughout the Indonesian archipelago, various types of bamboo grow. The kinds of bamboo plants in Indonesia are spotted bamboo, wulung bamboo, rope bamboo, embong bamboo, nineg bamboo, gombong bamboo, and betung bamboo [1]. Bamboo plants grow in clumps, young shoots from bamboo are called bamboo shoots. The name of the bamboo shoots also corresponds to the type of bamboo, namely spotted bamboo (*Bambusa maculata*), wulung bamboo shoots (*Gigantochlia antroviolacea*), tali bamboo shoots (*Gigantochloa apus*), embong bamboo shoots (*Bambusa cornua munro*), Sembilang bamboo shoots (*Dendrocalamus giganteus munro*), and Gombong bamboo shoots (*Gigantochloa pseudoarundinacea*) Betung bamboo shoots (*Dencrocalamus asper*).

Betung bamboo shoots are bamboo shoots that taste better than other bamboo shoots. Betung bamboo shoots are also known for their larger shape than other bamboo shoots, so many enthusiasts of bamboo shoots are used for vegetables only. Besides that, young shoots or bamboo shoots have a sweet taste so they are very popular. The community utilizes bamboo shoots to be used as side dishes. Betung bamboo shoots have many benefits for the health of the body because of their high nutritional content, especially rich in phosphorus, calcium, and fiber which are needed by the human body for the growth of muscle and nerve function. Another advantage of betung bamboo shoots, easy to find and easy to grow in the lowlands and highlands, bamboo betung shoots also have a relatively cheap price in Southeast Aceh.

In Aceh Province, especially in Southeast Aceh Regency, there are many bentung bamboo shoots. Betung bamboo shoots are very rarely used for snacks. In Southeast Aceh, bamboo shoots of betung are only used as vegetables such as curry and rendang. Researchers as people of Southeast Aceh are interested and take the initiative to make bamboo shoots as one of the fillings for Egyptian martabak. From this research, it is hoped that it can enrich the recipe, add nutritional value and taste to the Egyptian martabak.

In Indonesia, there are two types of martabak, namely sweet martabak and egg martabak. According to the Big Indonesian Dictionary, sweet martabak is a food made from a dough of flour, eggs, sugar, baked, sprinkled with peanut powder, chocolate and folded. Meanwhile, egg martabak is a food made from a mixture of wheat flour (for the outer layer) and a mixture of eggs, ground beef, and spices (for the filling) [2]. Martabak Egypt is another name for egg martabak whose names are distinguished only from the region, but in general, egg martabak and Egyptian martabak both have a skin dough like canai skin and have a filling made of eggs, ground meat and spices.

Egyptian martabak is a food that we often encounter in every region in Indonesia, its savory taste and according to Indonesian tongues make Egyptian martabak so popular. According to Angelina Rianti [3] stated that “This popular snack can also be found in India, Indonesia, Saudi Arabia and Malaysia. Initially, the Egyptian martabak was introduced in India, specifically in the Kerala region. Egyptian martabak is introduced as an appetizer, side dish, or a kind of snack. Traders and Indians who migrated to other countries brought and introduced this dish and it became a process of acculturation of food culture.

Martabak Egypt is suitable as a snack for children’s school lunches and has a higher market share than other fried foods. According to information on nutritional value (ING) per 100 g BDD (edible weight) Egyptian martabak is also rich in carbohydrates, protein, fat and energy so it is good for increasing energy, boosting the immune system, and helping in maintaining body fluid balance. Martabak Egypt can be consumed by all ages, from children to the elderly, both local people and tourists.

Based on the description above, the author tries to use bamboo shoots as an additional stuffing material in the manufacture of Egyptian martabak. The addition of bamboo shoots is expected to enrich the recipe, nutritional content and taste of the Egyptian martabak. Based on the description that has been put forward, the researcher wishes to study further about the addition of bamboo betung shoots to the Egyptian martabak filling.

2. RESEARCH METHOD

This research is an experimental research using a Completely Randomized Design (CRD). According to Mattjik & Sumertajaya [4] completely randomized design is the simplest type of experimental design. In general, this design is usually used for experiments that have a uniform or homogeneous medium or experimental environment. The experiments in this study are with four treatments and three rolls.

The experimental method is a research method that tests hypotheses in the form of causality by manipulating independent variables and testing changes associated with manipulation. The effect of the manipulation is called the dependent variable. During treatment manipulation, researchers control the external variables so that the changes that occur are really the result of manipulation, not caused by other variables.

The organoleptic test (color, aroma, texture, and taste) was carried out at the Catering Laboratory of the Family Welfare Education Study Program, Syiah Kuala Darussalam University, Banda Aceh, after obtaining a research permit from the Faculty of Teacher

Training and Education, Syiah Kuala University. According to Suharsimi Arikunto [5] the object of research is a variable or something that is the point of attention of a researcher. In this study, the object of the research was the addition of bamboo shoots to the manufacture of Egyptian martabak. Dependent variable(*dependent*)in this study are the color, aroma, texture, and taste of the addition of bamboo shoots in the manufacture of Egyptian martabak. Variable Independent variable(*independent*) in this study is the stuffing of Egyptian martabak with the addition of bamboo shoots betung.

2.1. Acceptability Test

Acceptance test for each treatment, tested to 5 expert panelists, and 30 consumer panelists, to the panelists presented 3 samples with three repetitions by giving a code number for each treatment and the code is only known by the researcher. In this study, a score card for the Hedonic Scale was used. Hedonic Scale is a scoring card that is used to test the acceptance of all food or confectionary products. This card is a value with a scale of 5(1-5) to see whether you like it or not, which shows whether the new recipe for Martabak Egypt is accepted or not, bamboo betung shoots from the results of the experiment. The acceptance test is carried out using a Hedonic Scale where the level of acceptance is divided into 5 levels, namely:

TABLE 1: Hedonic scale.

Acceptance Test	Score
Really like	5
Like	4
Neutral	3
Do not like	2
Very dislike	1

3. RESULTS AND DISCUSSION

The results of the research are the results of collecting and compiling research data in more detail so that it looks more detailed and systematic. A standard recipe is a standard measure of the use of ingredients in a processing. "Standard recipe is a food recipe that completes in detail the ingredients used, the raw size, cost of goods, cooking methods, and the expected quality." (Wiyasha, 2006) the opinion above can be concluded that the standard recipe is a standard dose that is approved and accepted by the wider community in the process of making a food.

The recipe for the control of Egyptian martabak bamboo shoots was based on testing by resource panelists using 50 grams of bamboo shoots, 60 grams of bamboo shoots, and 70 grams of bamboo shoots. The results of the observation test by resource panelists obtained an average value of MM1 22.53, MM2 23.13, and MM3 23.31. So it can be concluded that the standard recipe for Egyptian martabak for bamboo shoots is MM3 with an average value of 23.31.



Figure 1: Egyptian martabak samples MM1, MM2, MM3.

Sensory evaluation of Egyptian martabak bamboo shoots by 5 sources can be seen in Table 2.

TABLE 2: Sensory evaluation.

No	Rated aspect	Treatment		
		MM1	MM2	MM3
1	Color	23.06	23.36	23.3
2	Aroma	22.26	23.23	23.43
3	Texture	22.43	22.83	23.06
4	Flavor	22.4	23.13	23.46
Total Value		90.15	92.55	93.25
Average value		22.53	23.13	23.31

Information:

lv

MM1= Egyptian Martabak with bamboo shoots filling 50 g

MM2= Egyptian Martabak with bamboo shoots stuffed 60 g

MM3= Egyptian Martabak with bamboo shoots stuffed 70 g

The average rating given by 5 sources on the organoleptic characteristics (color, aroma, texture, taste) of the Egyptian martabak bamboo shoots as a whole can be seen in Figure 2 below.

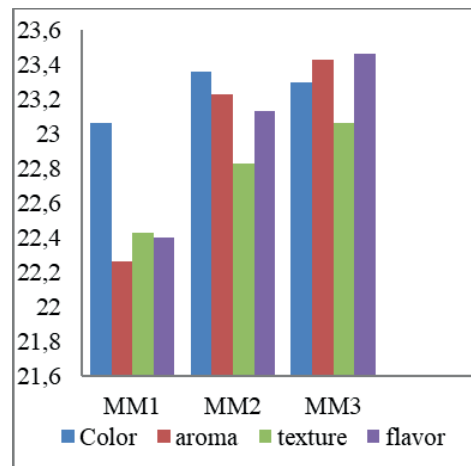


Figure 2: Average respondents' assessment of the overall treatment of Egyptian martabak bamboo shoots betung

Based on the average attention to the overall treatment of Egyptian bamboo shoots martabak, it can be said that the highest resource for organoleptic characteristics (color, aroma, texture and taste) was Egyptian bamboo shoots martabak with an average value of 23.46 in the treatment. 3. (MM3) with the addition of 70 g (35%).

3.1. Hedonic Scale

The results of the acceptance test on the characteristics of the Egyptian martabak with the addition of bamboo betung shoots to 30 consumer panelists for the assessment of the preferred color, namely in the first treatment (MM1), a brownish yellow color that fits with an average value of 3.76. Aroma in the second treatment (MM2) with an average value of 4.36. Texture in the first treatment (MM1) with an average value of 3.74. Taste in the first treatment (MM1) with an average value of 4.47.

The standard recipe for Egyptian martabak with the addition of betung bamboo shoots (*Dencrocalamus asper*) used is the Egyptian martabak recipe with the addition of betung bamboo shoots (*Dencrocalamus asper*) in treatment 3 with code MM3 with the addition of 30% bamboo shoots. This is in accordance with the organoleptic test (color, aroma, texture, and taste) assessed by the informants which showed that the Egyptian martabak with the addition of bamboo shoots in treatment 3 with the code MM3, obtained the highest value compared to the first and second treatments of Egyptian martabak. This product was chosen because it has an attractive brownish yellow color,

has the smell of Egyptian martabak, has a crunchy texture, and has a delicious taste. The age factor also influenced the assessment, because bamboo shoots were preferred by respondents aged 30-50 years and less favored by teenagers.

Based on the results of the study, it was explained that consumer acceptance of color, texture, and taste was obtained in treatment 1 with the code MM1 with the addition of 25% of bamboo shoots. This is because in treatment 1 with the code MM1. According to Qanita [6] "Color is the impression that the eye gets from the light reflected by some objects on which it is subjected to a pattern", the color in question is the right brownish yellow color. According to Nurwachidah et al [7] "Texture is the firmness of a food when it is touched and felt. According to Imam [8]"Taste is the sense of taste to detect chemicals/something that is eaten and the air", the intended taste is the typical taste of Egyptian martabak.

Based on the results of the study, it was explained that consumer acceptance of the aroma was obtained in treatment 2 with code MM2 with the addition of 30% bamboo shoots, because it has a fragrant aroma of Egyptian martabak so it is very appetizing and liked by panelists. According to Fajri [9] "Scent is a subjective smell that is very difficult to measure because each individual has different sensitivity and preferences". The aroma in question is the aroma obtained from the bamboo shoots of Betung and ground pepper which is added to the Egyptian martabak filling. Meanwhile, consumers don't like MM3 with the addition of 70 g of bamboo shoots, because according to the panelists it tastes more unpleasant and has a pungent aroma, has a hard texture and most of the panelists don't like bamboo shoots.

4. CONCLUSION

Based on the results of the study, the hypothesis was proven true from the results of the analysis using the LSD test at a significance of 0.05, H1 was acceptable, because there was an effect of adding betung bamboo shoots to the manufacture of Egyptian martabak on consumer acceptance in terms of organoleptic characteristics. The resource persons chose the Egyptian martabak, bamboo shoots, treatment 3 with the code MM3 in terms of color, aroma, texture, and taste. Consumers chose the Egyptian martabak, bamboo shoots, treatment 1 (MM1) in terms of color, texture, and taste. Meanwhile, in terms of aroma, consumers chose Egyptian martabak, bamboo shoots, treatment 2 (MM2).

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