

Hedonic Quality Analysis of Bagiak Traditional Snacks with Arnong Nasturtium Officinale R. Br Fortification

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Abstract: This study aims to determine the effect of adding nasturtium officinale r. br extract to Bagiak products on panelists' acceptance. This research is an experimental study using a Randomized Block Design using 4 treatments; B0 control, B1 addition of 2% Nasturtium officinale r. br extract, B2 addition of 5% nasturtium officinale r. br extract and B3 addition of 10% nasturtium officinale r. br extract. Determination of the sample using the Simple Random Sampling Technique consisting of 33 respondents, hereinafter referred to as panelists with certain criteria. Analysis of the data using analysis of variance (ANOVA) and if there is a significant difference, it will be tested further using the BNJ test with a 5% confidence level. The panelists' hedonic quality test was carried out on color, texture, taste, and aroma. The results showed that the treatment with the highest average value was the control B1 treatment in terms of color, texture, taste and aroma, while the average value treatment the lowest was shown in the b3 treatment with the addition of 10% nasturtium officinale r. br extract.

1 INTRODUCTION

Product innovation with among fortification is expected to help the problems that exist in Indonesia, namely nutrition, economy, and tourism. Nutritional problems are expected to fulfill children's nutrition because the products made are snack products so they can consume these vegetables to fulfill nutrition. The economy, especially among farmers, is expected to increase because the economic value of product innovation with among fortification also increases. The tourism industry with the diversification of these processed products will attract tourists because there are more variations for souvenirs.

Innovation with among fortification is focused on Bagiak products, Bagiak is a dry snack typical of Banyuwangi that is popular and popular. This Banyuwangi Bagiak snack is very delicious and easy to get, because there are many souvenir shops (Dilla, 2018). This research is focused on looking at the content of Bagiak with among fortification with several treatments. This aims to ensure that the product is nutritious, so that the product can be consumed safely.

Based on the description of the background, the research objectives are analyzing hedonic quality test of Bagiak product with among fortification.

2 LITERATURE REVIEW

2.1 Arnong Plant (Nasturtium Officinale R. Br)

The among plant (Nasturtium officinale R. Br) belongs to the Brassicaceae (cabbage) family. come from Europe and Asia. Watercress is usually consumed as a vegetable or salad. Watercress is a good source of vitamins A and C, containing niacin, ascorbic acid, thiamine, riboflavin, and iron (Stephens & James M., 2015). (Ibrahim A, 2015) Watercress contains sothiosinate compounds, kaempferol glycosides and tryptophan which function to ward off free radicals, help repair damage and DNA synthesis. This plant grows a lot in the highlands.

2.2 Fortification

Food fortification according to FAO/WHO is the addition of macro or micro nutrients to food that is usually consumed to maintain or improve the nutritional quality of food in the total diet of a group, community, or population (Helmiyati, et al., 2018). Food fortification is included in the policy framework to accelerate nutrition improvement in the first 1000 days of life. Fortification status in Indonesia is mandatory (Martianto & Rachman, 2018). Mandatory fortification is carried out when the government legally obliges food producers to add micronutrients to certain categories of food. The determination and arrangement of the fortification is regulated and monitored by the government (Helmiyati, et al., 2018).

3 RESEARCH METHODS

3.1 Types of Research

This research is a quantitative research using Randomized Block Design (RBD) with 4 treatments and 3 replications. Treatment consists of B0 control, B1 2% addition nasturtium officinale r. br extract, B2 5% addition of nasturtium officinale r. br extract and B3 10 % addition of nasturtium officinale r. br extract extract. Hedonic test is applied to 30 panelists that will test the color, texture, taste and aroma.

3.2 Data Colecting Method

The collecting data methods of this research are divided into several steps, such as:

1. Documentation
Documentation is data collecting technique by analyzing the data that has been collected from the object of research. In this case, the researcher will analyze data that has been collected from the farmer nasturtium officinale r. br in Songgon.
2. Observation.
Observation is data collecting technique by observing the research object; in this case the researcher will observe the level scale of hedonic quality product.
3. Interview.
Interview is used to know the bagiak production process.

3.3 Time and Place of Research

This research was conducted at Laboratorium of management bisnis of tourism Study Program Politeknik Negeri Banyuwangi. Timeline for this research is May – November 2022.

4 RESEARCH RESULT

4.1 The Implementation of Organoleptic Test

The Organoleptic test was conducted to 33 panelists consisting of 19 men and 14 women, who addressed in the origin or boarding house around of Rogojampi subdistrict. The panelists are student, college students, and public societies, with the range of age are 18 years up to 23 years old. The panelists willing to be the judges with the requirements that have been specified, such as fill out the form of panelist, physically and mentally healthy, bagiak consumption and comply health protocols. The sample hedonic quality test consisting of 4 treatments. Treatment consists of B0 control, B1 2% addition nasturtium officinale r. br extract, B2 5% addition of nasturtium officinale r. br extract extract and B3 10 % addition of nasturtium officinale r. br extract. The implementation phases of the organoleptic test shown in Figure 1.

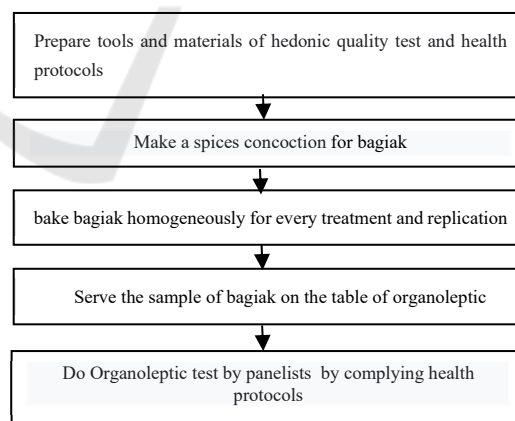


Figure 1: The implementation phase of the organoleptic test.



Figure 2: The process of making nasturtium officinale r. br extract.



Figure 3: The process of making bagiak.

4.2 The Analysis of Organoleptic Test Result

The overall recapitulation of Organoleptic Test Result with 4 treatments and 3 times replications for 33 panelists can be shown in Figure 4.

The Organoleptic Result.

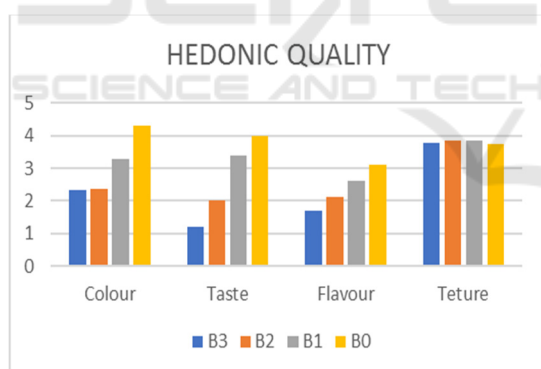


Figure 4: The recapitulation of organoleptic result.

Based on the results of hedonic quality analysis using ANOVA in fig 4, it can be concluded that the flavour and texture are not significantly different because the calculated F value is smaller than F table. In the color and taste of the ANOVA results, the calculated F is greater than the F table, so there is a significant difference, so the color and taste are continued with BNJ analysis.

Table 1: BNJ analysis on colour.

Treatment	Avarage	Simbol	Average BNJ
3	2.33	a	2.74
2	2.36	ab	2.77
1	3.27	c	3.68
0	4.3	d	4.71

BNJ analysis on color (table 1) resulted in an analysis that there was a significant difference in the treatment of B0, B2, B3 while B4 had no significant difference with B3. The highest result was obtained by B0, which was bright because there was no fortification of nasturtium officinale r. br extract, the second rank was B2, which was quite bright, this was because there was a mixture of 2% nasturtium officinale r. br extract.

Table 2: BNJ analysis on taste.

Treatment	Avarage	Simbol	Average BNJ
3	1.2	a	1.88
2	2	b	2.68
1	3.4	c	4.08
0	4	c	

BNJ analysis on taste there is a significant difference in B3 and B1, while between B0 and B1 there is no significant difference. The highest average was obtained B0 which was sweet because there was no fortification of nasturtium officinale r. br extract, and the second rank was B1 which was slightly sweet, this was because there was a mixture of 2% nasturtium officinale r. br extract.

5 CONCLUSION

From the research that has been done, it is concluded that:

1. Addition of nasturtium officinale r. Extract of br in the product that affects the level of hedonic quality in each treatment sample
2. treatment for B0 (0%) without the addition of nasturtium officinale r. br extract has the highest average score of hedonic quality and the closest is B1 with the addition of nasturtium officinale r. extract br (2%), followed by B2 (5%), and the lowest was treatment B3 with the addition of nasturtium officinale r. extract br (10%).

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