

## Utilization of Tofu Dregs Flour in Processed Food *Macaron* as a Culinary Tourism Product in Banyuwangi Regency

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### Abstract

*The number of tofu industries in Banyuwangi certainly also produces its own waste which, if not properly processed, will pollute the environment. This research uses an R&D research approach with 4D development (Define, Design, Development, Dissemination) and is tested using the Organoleptic test (hedonic and hedonic quality) with 5%, 10%, and 15% tofu dregs flour substitutions that pay attention to aspects of aroma, taste, texture, and color. The purpose of this research is useful to increase knowledge about innovation in processing tofu pulp and to know the process of making Macarons with tofu pulp flour substitution. In the hedonic quality organoleptic test that has been carried out to 5 trained panelists, the best tofu dregs flour substitution is 10%, while for the hedonic organoleptic test to 15 semi trained panelists, the result is 86% where the value is included in the very like category.*

**Keywords:** Culinary Tourism Product Innovation Tofu Dreg Flour Macaron

### INTRODUCTION

Banyuwangi has culinary tourism that produces culinary products ranging from main dishes such as Sego Tempong, Pecel Pithik, Sego Cawuk, and others to dishes that have a sweet taste such as cucur cake, bolu klembyen and others. The potential for culinary tourism is certainly supported by the potential of the region. As in Plengsengan Kampung Mandar Banyuwangi which is famous for *Fish Market* and processed grilled fish in it. Banyuwangi also has an area that has great potential as a culinary tourism destination, one of which is Kemiren Village, Glagah District, Banyuwangi. One strategy to develop culinary tourism in Banyuwangi is to develop micro, small and medium enterprises (MSMEs) in restoring the economy which is currently being attempted by every village to innovate opening new tourist destinations, one of which is culinary tourism.

Some culinary tourism developed in Banyuwangi Regency is a tofu center that has the largest tofu production center in Banyuwangi Regency, namely Gambiran, Genteng, Srono, Rogojampi and Pesanggaran Districts. However, the negative impact of its development is an increase in liquid waste and solid waste that will pollute the environment. Tofu dregs have low economic value and are also easily damaged, and cannot be stored for long. Along with the increase in tofu production, the use of tofu dregs flour which is

processed into culinary products is very much needed to increase sales value. Banyuwangi develops culinary tourism by developing micro, small and medium enterprises (MSMEs) in restoring the economy which is currently being attempted by each village to innovate to open new tourist destinations, one of which is culinary tourism.

To overcome the waste from tofu production, namely by processing solid waste or tofu dregs into products that have high selling value. So far, people have only used solid tofu waste / tofu dregs as animal feed or as food, namely tempe gembus which has a fairly low selling value. One of the uses of tofu dregs is to process it into tofu dregs flour. Tofu dregs can be utilized and redeveloped through a recycling process or converted into other products that are useful and beneficial and have high economic value, for example as a substitute for flour in processed products. If tofu dregs are not immediately processed or handled, they will cause an unpleasant odor, because the water contained in the tofu dregs will be easily overgrown by microbes. Tofu dregs are utilized because most of the nutrients can still be maintained, such as high protein content, and contain a lot of fiber. The utilization of tofu dregs is made in the form of flour which is chosen because it extends the shelf life.

In this study, researchers want to substitute flour from tofu dregs for macaron processing,

where macaron is one of the culinary tourism products, but macaron itself is not easy to get in Banyuwangi. Only a few cake *shops* or restaurants that sell and have high selling prices for their products. The results of pre-research on the survey on the ease or difficulty of obtaining/finding products macaroni Banyuwangi, that as many as 68.1% of products macaron consumed by respondents are not found in Banyuwangi city. Therefore, the author wants to innovate the recipe macaron by utilizing processed tofu dregs as flour, so that the public is more familiar with the product macaron which is easily available in Banyuwangi at a more economical selling price.

## MATERIALS AND METHOD

Tourism is currently starting to develop in accordance with the interests and motivations of tourists. One of them is related to culinary tourism (Wijayanti, 2020). Culinary tourism is a journey or part of the activity that is carried out voluntarily and is temporary to enjoy typical food and drinks (Harsana, 2011). Culinary tourism has become a new lifestyle for people unconsciously, where eating habits are not only primary needs, but also tertiary needs (Besra, 2012). Banyuwangi has an area that has great potential as a culinary tourism destination, one of which is Kemiren Village, Glagah District, Banyuwangi. There are so many restaurants/*restaurants* by selling various culinary specialties that are the main attraction of culinary tourism and also the form and concept chosen, namely the traditional house of the Osing tribe in Banyuwangi (Ajriya, 2021). The largest tofu village is culinary tourism in Banyuwangi Regency, namely Gambiran, Genteng, Srono, Rogojampi and Pesanggaran Districts. From this order, Gambiran District is ranked first as the district with the most tofu industries, namely in Gambiran Village with 37 productions, and in Purwodadi Village as many as 41 tofu industries managed by the community (Industry, Trade and Mining Service (Disperindag), 2016, Banyuwangi Regency). Along with the increase in tofu production, the waste from processing tofu dregs is increasing,

both liquid waste and solid waste. The impact of this increase will pollute the surrounding environment (Lestari, 1994). Tofu dregs are waste in the form of solids from squeezed soybean porridge that is no longer useful in making tofu and has quite potential to be used as a food ingredient because tofu dregs still contain good nutrition. The use of tofu dregs is still very limited and often becomes waste that is not utilized at all (Winarno, 2003). The importance of utilization has the meaning of the process, method or act of utilizing or making something that exists useful. (Poerwadarminta, 2002).

Utilization of tofu dregs to make macaron culinary products *Which* is a snack or treat that originates from Italy, taken from the word *Macaroni* which mean *fine dough* or smooth dough. *Macaron* At first it was shaped like a biscuit, but over time it changed shape macaron innovating in a different form, namely round and having legs that are glued together with various kinds of fillings and choices of flavors or fillings and having various kinds of colors according to Wulandari's taste (2013). To get macarons good you must follow some simple ways. The first is to separate the egg white from the egg yolk the day before use, and store it in the refrigerator. Then when it is going to be used, remove it from the refrigerator first and wait until the egg white returns to room temperature. Also explained the second stage is in mixing almonds, sugar flour, and the process of resting the dough so that the outer skin layer dries, in order to avoid failure of the skin breaking macaron in the combustion process. Macaron Including processed cookies from Italy. For that reason, processed cookie macarons have quality standards, namely the quality requirements for cookies. Determination of quality standards is a reference that the product has good quality and is safe for health Abraham (2011)

This research is an experiment. With qualitative and quantitative data collection techniques. With research tools research *and development* with 4D development (*define, design, development and disseminate*). The data collection technique for this study uses primary and secondary data where primary

data is obtained from interviews, documentation and questionnaires. And secondary research is obtained from books and also related literacy journals. Qualitative data analysis methods obtained from semi-structured interviews with 5 trained panelists. As for quantitative data where the data obtained from the Hedonic Quality Organoleptic test and also the Hedonic Organoleptic Test to 5 trained panelists, 15 Semi-trained Panelists and 30 consumer panelists from the aspects of texture, aroma, color and taste of macaron with the substitution of tofu dregs flour. There is a determination of the percentage of answers from the calculation of the questionnaire results with the formula:

$$\bar{X} \text{ rate-rate} : \frac{\text{total score obtained}}{\text{Number of panelists}}$$

$$\text{Index Value} : \frac{\text{Total score obtained}}{\text{Highest score} \times \text{number of panelists}}$$

With the following criteria for preferred results:

No	Score In Percentage	Eligibility Category
1.	< 21%	Very disliked
2.	21%-40%	Don't Like
3.	41%-60%	Just Like
4.	61%-80%	Criticism
5.	81%-100%	Really like it

## Results

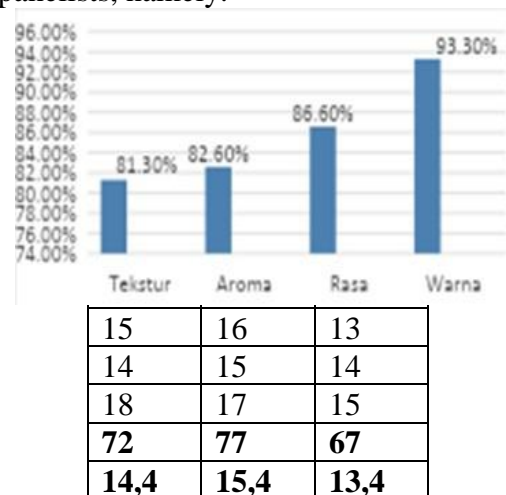
### A. Define

At the level *Define* This researcher analyzed the product macaron among the Banyuwangi community regarding the experience of consuming products macaron, where to get/buy macarons along with knowledge of the raw materials of macaron products. Researchers also analyzed tofu dregs and their processed products among the community. After analyzing the products to be made, researchers innovated by substituting tofu dregs flour with the main raw material, namely almond flour, in the product *macaron*. Researchers create a reference recipe design from macaron which will later be developed together with tofu dregs flour

to 5 trained panelists. This researcher also conducted an organoleptic test of hedonic quality against the reference recipe of *macaron* to 5 trained panelists where the formulation (F1) was selected as the reference recipe.

### B. Design

At the level *design* the researcher made a design for the reference recipe for the product that had been set, namely formula 1 (F1) by substituting tofu dregs flour. The design Product Recipe *macaron*. This was discussed together with 5 trained panelists. The following is a draft design: 5% tofu dregs flour, 10% tofu dregs flour and 15% tofu dregs flour. With the results of the hedonic quality organoleptic test on the development recipe tested on 5 trained panelists, namely:



The summary of the results of unstructured interviews with 5 trained panelists is as follows:

1. At a percentage of 5% of tofu dregs flour in processed products macaron Based on the results of the discussion of criticism and suggestions from 5 trained panelists, namely from 4 aspects, namely taste, color, aroma and texture, it has the same characteristics as the original product *macaron* so that research results on tofu dregs flour have not yet emerged.
2. Then, at a percentage of 10% substitution of tofu dregs flour, in terms of taste, it does not affect the taste, aroma, or original taste *macaron*, However, in terms of texture and

aroma, there is very little tofu dregs flour, so there is a balance between the development macaron with research into the original recipe macaron still balanced balance.

3. The results of the 15% substitution of tofu dregs have an effect on 4 aspects. Whereas if viewed from the texture aspect of the final result of the development macaroon has a slightly hard and heavy texture. So from 5 trained panelists, they chose the reference recipe formula 2 (F2) in developing the macaron.

### C. Development

At the level *development* This conducted a hedonic organoleptic test on 15 semi-trained panelists against the selected development recipe by trained panelists. At this stage *development* also assesses the level of public liking for the product macaron with tofu dregs flour substitution. The following are the results of the level of public preference based on 4 aspects, namely texture, aroma, color and taste:

Based on the graph above, Texture has the smallest value with a value of 81.30% and the largest value is 93.30%. Where these values are still in the category of being very popular with the public and worthy of being traded.

### D. Disseminate

At this stage the researcher disseminates the results macaron to 30 consumer and researcher panelists using visitors and tourists to tourist destinations

### The knot

Making process *macaron* with the substitution of tofu dregs flour in this study has gone through organoleptic tests of hedonic and hedonic quality. Where the organoleptic test on the hedonic quality assessment of 3 reference recipes will then be selected 1 best reference recipe by 5 trained panelists, namely the first formula (F1) which has a more concentrated almond aroma. With a revision of the tofu dregs flour processing technique by drying it in the sun first. then developed with a development recipe with three different

percentages, namely by substituting tofu dregs flour with the best substitution results of 10%, namely in the development formula (F2) which was also tested in the organoleptic test of hedonic quality to 5 trained panelists where there is a revision to the tofu dregs flour processing technique which is done by drying it first in direct sunlight and also the results are the best results by maximizing the use of tofu dregs flour that has been substituted in the product macarons but does not change the characteristics of macaron. Level of public acceptance macaron with the substitution of tofu dregs flour obtained from the hedonic organoleptic test which was tested on 15 semi-trained panelists in the development of the selected formulation recipe, namely (F2) and the overall percentage results were found to be 86% which was included in the very preferred criteria. Product *macaron* with the substitution of tofu dregs flour, it was also distributed to 30 consumer panelists, namely culinary tourism visitors/tourists in Banyuwangi.

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