



THE EFFECT OF SUBSTITUTION OF BENENG TARO FLOUR (XANTHOSOMA UNDIAS K.KOCH) ON THE SENSORY QUALITY OF PEMPEK PALEMBANG

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ABSTRACT:

Beneng taro flour is used as a substitute ingredient in making pempek adaan to optimize the use of local food ingredients that grow a lot in the area. This study aims to analyze the effect of beneng taro flour substitution in manufacturing pempek adaan on sensory quality. This research was conducted at the Processing Laboratory of the Culinary Education Study Program Jakarta State University. The method used in this research is the experimental method. The research sample used was pempek adaan taro flour substitution of 15%, 25% and 35%, then tested on three expert panellists who assessed colour, taste and texture. This research concludes to provide a substitute for taro beneng flour, which has a good sensory quality of 25%, to be developed.

Keywords: Pempek adaan, Beneng taro flour, Sensory quality.

Article History

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INTRODUCTION

The taro plant was first cultivated in Asia, the Pacific, Central America and Africa. Taro is one of the important food crops in Indonesia and other Asian countries, better known as a food ingredient for snacks or vegetable side dishes (Gardjito *et al.*, 2013). Indonesia has four varieties of taro, namely Colocasia, Xanthosoma, Alocasia and Cryosperm. One of the Xanthosoma varieties, namely Banten taro (Xanthosoma undies K.Koch), is better known as taro beneng (giant taro), which stands for big and long means large and yellow, originally from Pandeglang Regency, Banten Province. Taro beneng grows wild in the forests of Mount Karang Pandeglang, which grows very fast and a lot, so it is often considered a nuisance plant. The community usually processes Beneng taro into snacks, substitutes for staple foods during panceklik, or as a combination food for staple foods. Food products using taro beneng are still rarely found and limited.

In addition to being used directly, taro beneng can be used as a semi-finished processed product, including being made into flour. Beneng taro flour products are produced from fresh taro tubers that previously went through peeling, washing, soaking, kneading, drying, grinding, sifting and packaging. Beneng taro flour contains a high starch of 84.96% (Rostianti *et al.*, 2018).

The main constituents of starch are amylopectin and amylose at 100 grams of taro beneng flour, containing 37.2% amylopectin and 19.27% amylose

(Kusumasari *et al.*, 2019: 232). The content is closely related to the texture to be produced. One of the products that are closely related to texture is pempek.

Pempek comes from the word "diempek-mpekkkan", which in Palembang is a term for how to make food made from fish and tapioca and then "diempek-mpekkkan" (kneaded many times) (Anita, 2014). There are various types of pempek circulating in the market such as pempek lenjer, pempek submarine, pempek kulit, pempek pastel and pempek adaan. The pempek is modified using other materials. Pempek adaan, commonly called round pempek is immediately fried without being boiled first. The characteristic of pempek is the addition of coconut milk and onions, so it has a savoury taste typical of satan and is fragrant. The stage of making pempek adaan starts from smoothing fish, combining ingredients, mixing, forming and frying process.

In this study, the use of taro beneng flour as a substitution ingredient in the manufacture of pempek adaan aims to optimize the use of local foodstuffs. The use of beneng taro flour in Indonesia has not been optimally utilized by the public, so researchers are interested in processing beneng taro flour into pempek adaan products. The use of taro beneng flour as a substitution material in manufacturing pempek adaan is expected to produce good sensory quality colours, flavours, and textures. Based on this description, a study was conducted on the effect of the

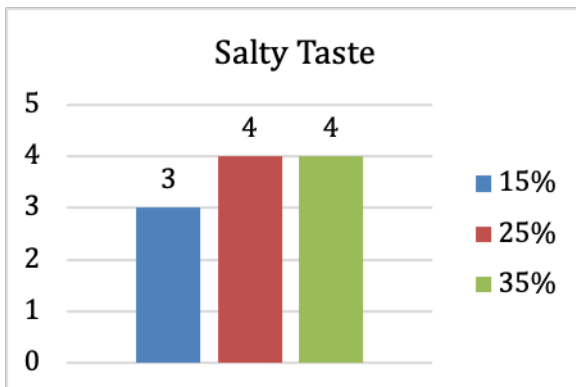
substitution of taro beneng flour on the sensory quality of pempek.

RESEARCH METHODS

This research was conducted at the Processing Laboratory of the Tata Boga Education Study Program, State University of Jakarta. The method used in this research is the experimental method. In this study, a sensory quality test was carried out to determine and analyze the influence of taro beneng flour substitution on the manufacture of pempek adaan on sensory quality, which includes aspects of colour, taste and texture with 3 (three) different percentages of beneng taro flour substitution, namely 15%, 25% and 35%. The panellists in this study are 3 (three) expert panellists.

RESULTS AND DISCUSSION

A. Assessment of Pempek Color Aspects There is a Substitution of Beneng Taro Flour

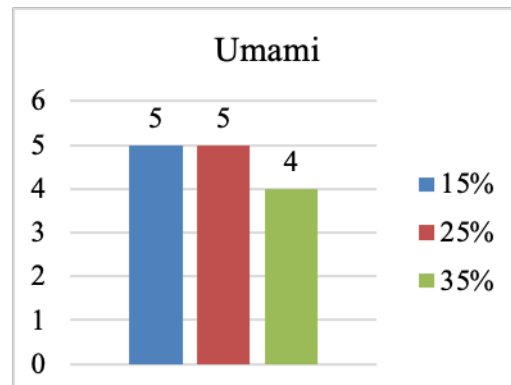


Graphic 1. Salty Taste

Based on the assessment of expert panellists, an average score was obtained in the aspect of salty taste, namely pempek adaan 15%, namely 3

with the salty assessment category, pempek adaan 25%, namely 4 with the assessment category not salty, and pempek adaan 35%, namely 4 with the assessment category not salty. The descriptive results on the salty taste aspect of pempek adaan show that pempek adaan (substitution of taro flour beneng 25% and 35%) has the highest average value of 4 in the non-salty category, which is included in good quality. This is because using fish can give a salty taste naturally (Muchtadi *et al.*, 2010). The salty taste in pempek is also obtained from using salt and fish.

B. Assessment of Taste Aspects of Umami Pempek Adaan Substitution of Beneng Taro Flour

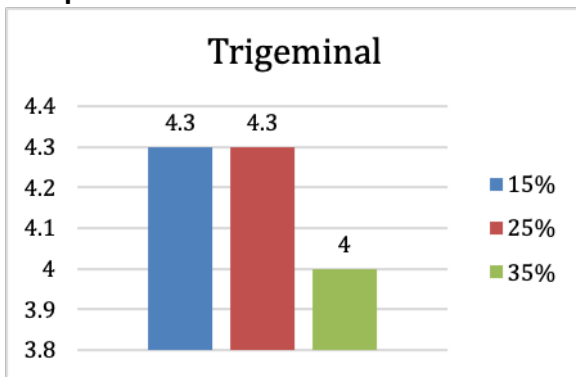


Graphic 2. Umami

Based on the assessment of expert panellists, an average score was obtained in the umami aspect, namely pempek adaan 15% and 25%, namely 5 with the savoury assessment category, and pempek adaan 35%, namely 4 with the same savoury assessment category. The descriptive results on the umami aspect of pempek adaan show that pempek adaan (substitution of taro flour

beneng 15% and 25%) has the highest average value of 5 in the savoury category, which is included in good quality. This is because the source umami taste is obtained in two ways: natural and artificial. It is naturally obtained from broth, chicken, meat, fish, coconut milk, soy sauce, fish sauce and others, while artificially obtained through the addition of flavouring seasonings, such as *monosodium glutamate* (Ketaren, 2019). The umami taste in pempek is obtained using fish, coconut milk and sugar.

C. Assessment of Trigeminal Aspects of Pempek Substitution of Taro Flour

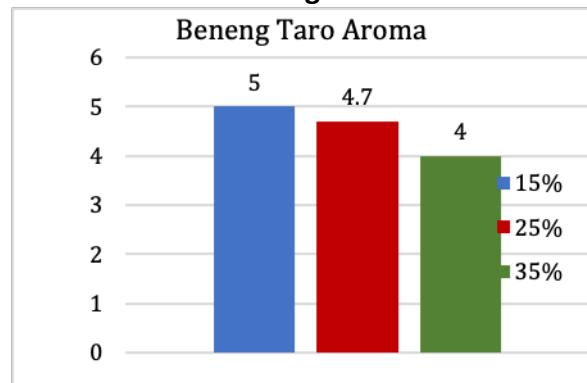


Graphic 3. Trigeminal

Based on the expert panellists' assessment, the average trigeminal aspect score was obtained, pempek adaan 15%, 25% and 35%, namely 4.3, with the assessment category very unfishy/rancid. Based on the descriptive results on the trigeminal aspect of pempek adaan, it shows that pempek adaan (substitution of taro flour beneng 15%, 25% and 35%) has the highest average value of 4.3 in the category of very not fishy/rancid which is included in good quality. This is because one of the

ingredients in manufacturing the pempek is fish. The use of fish, if not handled properly, will be damaged and affect the taste (Gardjito *et al.*, 2019). Therefore, the fish used in making pempek adaan must be in new condition to produce pempek adaan with good quality.

D. Aroma Talas Beneng

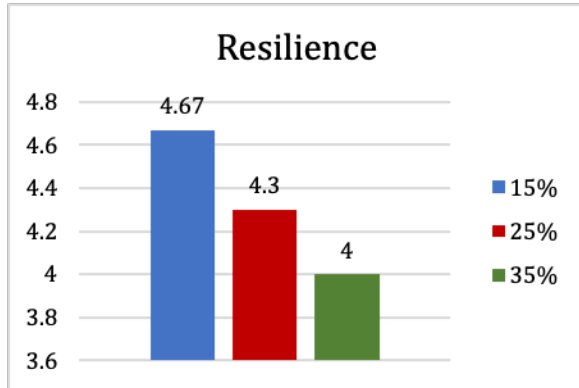


Graphic 4. The Aroma of Beneng Taro

Based on the assessment of expert panellists, the average value in the aspect of taro beneng aroma was obtained, namely pempek adaan 15% and 25%, namely 5 with the assessment category not scented with taro beneng and pempek adaan 35%, namely 4 with the assessment category slightly scented with taro beneng. Based on descriptive results on the aspect of taro beneng pempek adaan aroma, it shows that pempek adaan (substitution of taro beneng flour 15%) has the highest average value of 5 in the category of non-scented taro beneng, which is included in good quality. This is due to the ingredients and other spices used in making pempek adaan (Fadiati, 2022). In addition, taro beneng flour does not emit

a dominant aroma when applied to food products.

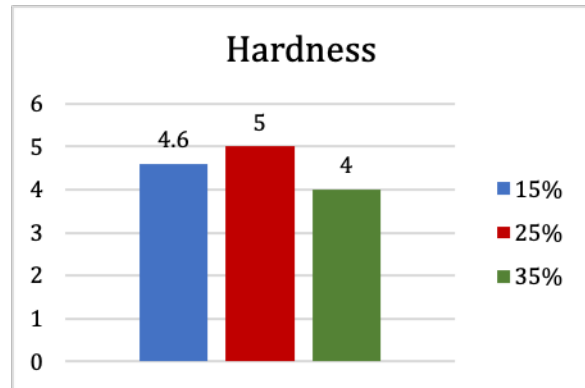
E. Supple Texture



Graphic 5. Resilience

Based on the assessment of expert panellists, an average value was obtained in the aspect of chewiness, namely pempek adaan 15% with a category of 4.67 which is chewy, pempek adaan 25%, which is 4.3 is slightly chewy and pempek adaan 35%, which is 4 with a slightly chewy assessment category. Based on the descriptive results on the chewiness of pempek adaan, pempek adaan (substitution of taro flour beneng 15%) has the highest average value of 4.67 in the chewy category, which is included in good quality. This is because tapioca flour by 83% (Utomo *et al.*, 2011). The content is also owned by taro beneng flour, 37.2% (Kusumasari *et al.*, 2019). Amylopectin is closely related to the chewiness texture produced in the product.

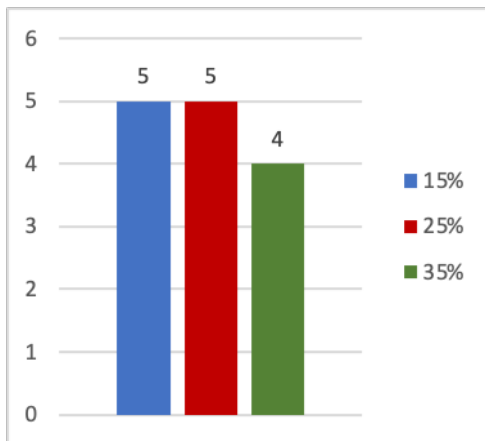
F. Hardness Texture



Graphic 6. Hardness

Based on the assessment of expert panellists, an average value was obtained in the aspect of violence, namely pempek adaan 15% with a category of 4.6 assessment, namely not hard, pempek adaa 25%, namely five not hard and pempek adaan 35%, namely 4 with a very not hard assessment category. Based on the descriptive results on the hardness aspect of pempek adaan shows that pempek adaan (substitution of taro flour beneng 25%) has the highest average value of 5 in the non-hard category, which is included in good quality. This is because of the use of eggs in the manufacture of pempek adaan, which functions to help reduce the level of hardness in pempek adaan. The arrangement of egg yolks is mostly fat to improve the texture of food products (Karina *et al.*, 2017).

G. Surface Smoothness



Graphic 7. Surface Smoothness

Based on the assessment of expert panellists, the average value was obtained in surface smoothness, pempek adaan 15% and 25% with category five assessment, which is rather fine, pempek adaan 35%, namely 4 with the category of fair assessment. Based on descriptive results on the surface smoothness of pempek adaan, pempek adaan (substitution of taro flour beneng 15% and 25%) has the highest average value of 5 in the rather good category, which is included in good quality. This is because the finer the material used and the denser the formation process, the smoother the surface of the pempek adaan produced (Fadiati, 2022).

CONCLUSION

The test results on the sensory quality of pempek adaan on the colour aspect, namely pempek adaan with a substitution of taro beneng flour 25%, the salty taste aspect, namely pempek adaan with a

substitution of taro beneng flour 25% and 35%, umami and trigeminal aspects, namely pempek adaan with a substitution of taro beneng flour 15% and 25%, aroma aspects, namely pempek adaan with a substitution of taro beneng flour 15%, The chewiness aspect is pempek adaan with 15% beneng taro flour substitution, the hardness aspect is pempek adaan with 25% beneng taro flour substitution and 15% and 25% surface smoothness aspects. The conclusion of this study is that pempek there is a substitution of beneng taro flour by 25% has good quality and optimizes the use of beneng taro flour as a local food ingredient.

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