

THE ADDITION OF KELUWIH BY DIFFERENT CONCENTRATIONS TOWARDS ORGANOLEPTIC QUALITY OF CHICKEN ABON

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Abstract

Abon is a typical type of dry food, made from processed meat, food products that are widely consumed by Indonesian people made from animals. In processing of abon, the meat is mixed with spices, salt and sugar as a flavor enhancer and as a preservative. Spices that are used include red onion, garlic, galangal, and coriander. Abon with good quality must be made of good quality ingredients, especially raw materials, namely meat. The raw materials in processing this product consists of main raw materials and additional raw materials. The main ingredient is chicken meat, while the additives are keluwih fruits. The purpose of this research was to determine the addition of keluwih fruits by different concentrations to the quality of organoleptic of chicken abon. The results of the study showed that the addition of keluwih with different concentrations (10%), (15%), (20%), and (25%) had a very significant effect on color and taste, but had no significant effect on aroma value, and abon texture. Chicken abon with the best organoleptic quality was obtained from the addition of 10% concentration keluwih with product characteristics, color 4.22 (likes), taste 4.17 (likes), aroma 3.39 (rather like) texture 3.35 (rather like).

Keywords: Abon, chicken, keluwih, processed meat

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1. INTRODUCTION

Chicken meat as the main basic ingredient in making shredded chicken meat is one type of meat that can be processed into meatballs, sausages, shredded, jerky and grilled meat. To choose a good chicken meat, there are several characteristics that must be considered, namely, the meat has a white, gray and bright color. Chicken skin color is usually yellowish white and clean. When touched, the meat feels moist and not sticky, the chicken fiber is smooth, easy to chew and grind, easy to digest, and has a soft flavor. The aroma of chicken meat does not sting, does not smell fishy, and does not rot (Bintoro, 2008).

Chicken meat is one of the food contributors to protein that is consumed by many people (Puspitasari, 1992). The level of consumption is predicted to increase with increasing public awareness of the importance of animal protein. Therefore, to meet these consumption needs with good quantity and quality, chicken meat handling is needed as well. The purpose of

handling meat is to prevent the decline in the quality of meat so that it can shorten the shelf life, physical changes (color and odor), changes in taste, which can then cause health problems for consumers who consume it.

Shredded meat is one of the processes of meat processing that involves many processes, including boiling meat, slicing, seasoning, frying, and pressing. Abon making process has long been known by the community because the manufacturing process can be made in the traditional way. The traditional floss making is to use a fork to slice meat into smaller and uniform sizes, because shredded is a food ingredient made from meat fibers from livestock, in making shredded meat is often also added fruit. Keluwih is a type of jackfruit that is well known by its scientific name, namely *Artocarpus, A. communis, A. Altilis* or *A. insica*. This plant is widespread in Indonesian regions. Two types are known, namely those that do not have seeds known as breadfruit, which have seeds known as family names. Keluwih plants have the potential for

food diversification, because significant nutritional components include carbohydrates, proteins, and minerals. Besides that, Keluwih is almost similar to meat fiber, so it becomes an alternative that can be chosen in its use, namely by adding it to shredded meat (Elliyasami and Hamzah, 1997). The purpose of this research was to determine the effect of adding keluwih at different concentrations on organoleptic quality of shredded chicken.

2. MATERIALS AND METHODS

Materials and tools

The ingredients used in this study were chicken meat obtained from the Lambaro market, keluwih fruit, coconut milk, sugar, coconut, salt, cooking oil, onion, garlic, coriander, red chili, candlenut, tamarind, galangal, bay leaf, orange leaves, and lemongrass stems. The tools used in this study were pans, stoves, mortars and crackers, cutting boards, knives, frying tools, blenders, shredded presses, filter cloths, and plastic containers.

Research methods

This study uses a Completely Randomized Design (CRD) with a factor of the number of keluwih fruit addition which consisted of 4 levels of treatment namely A = 10%, B = 15%, C = 20%, D = 25%. Each treatment was carried out 5 replications so that it was obtained 20 experimental unit samples.

Work procedures

The meat was weighed as much as 1 kg and cut into cubes, then the meat was pressed with a pres cooker for 30-40 minutes then removed. The meat was then weighed again to find out the value of the cooking losses. Then the cooked meat was shredded with a fork. After shredded meats were the uniform and smooth,

meat was put into a pan and added with keluwih (10%, 15%, 20% and 25%), coconut milk, lemongrass, coriander, garlic, onion, pepper, grated galangal, and salt. After that, the meat in the pan was cooked over low heat until cooked and thickened, then fried until kept stirring so as not to burn until it turns brown, after being cooked removed and drained.

Analysis Method

The parameters of observations made in this study included organoleptic testing of color, taste, aroma, and texture (Soekarto, 1985). The data presented in this study were analyzed using analysis of variance or Analysis of Variance (ANOVA) with SPSS 2010 software. If the ANOVA results indicate differences in treatment then proceed with the Least Significant Difference test (LSD) with a level of 5%.

3. RESULTS AND DISCUSSION

Organoleptic Test

Organoleptic test is also called sensory test because its assessment is based on sensory stimulation of the five senses. Organoleptic general characteristics generally consist of 4 groups, namely visual (color and tenderness), color, aroma, taste, texture, but sometimes it can be more dependent on the type and specifications of ingredients / food products. However, there is also a mention that organoleptic tests on meat include: meat color, texture, wetness, suppleness, and fat. According to Soekarto (1985), the purpose of the hedonic test or the test of preference is to find out the panelist's response to quality characteristics in general, for example color, taste, aroma, and texture.

Table 1. The average organoleptic test of shredded chicken due to the addition of keluwih

Addition of Keluwih (%)	Organoleptic Test			
	Color	Taste	Aroma	Texture
A = 10	4.18 ± 0.09 ^a	4.15 ± 0.04 ^{cd}	3.32 ± 0.24 ^{tn}	3.37 ± 0.36 ^{tn}
B = 15	3.44 ± 0.13 ^{ab}	3.36 ± 0.17 ^{ab}	3.36 ± 0.19 ^{tn}	3.14 ± 0.02 ^{tn}
C = 20	3.62 ± 0.05 ^{bc}	3.70 ± 0.69 ^c	3.24 ± 0.05 ^{tn}	2.97 ± 0.46 ^{tn}
D = 25	3.31 ± 0.07 ^a	3.30 ± 0.05 ^a	3.32 ± 0.37 ^{tn}	3.09 ± 0.08 ^{tn}

Different lowercase letters in different columns indicate markedly different. Organoleptic Test: 1) very dislike, 2) dislike, 3) somewhat like, 4) like, and 5) like very much.

Table 1 showed that the panelists preferred the addition of fruit in the concentration of 10% at the level of acceptance rather like to like. The results of organoleptic assessment (color, taste, aroma, and texture) can be concluded that the chicken floss produced due to the addition of keluwih with different concentrations has met the level of acceptance by the panelists as presented in Table 1.

Color

Color is the nature of food products that most attract the attention of consumers and most quickly give the impression of being liked or not. Color intensity of cooked meat depends on changes in pigment that occur during cooking, the change is determined by the type, duration and cooking. The process of cooking or processing food can cause the color of food or products can be brighter because of the loss of pigment due to the release of cell fluids (Elviera, 1991).

The results of the analysis of the effect of the addition of concentration of keluwih on organoleptic values of shredded chicken showed that the organoleptic values of colors obtained ranged from 3.28 to 4.34 (rather like to like). The average organoleptic value of the shredded whole chicken is 3.67 (rather accepting acceptance).

The results of analysis of variance in organoleptic values of color of chicken shredded showed that the treatment of adding

different concentrations of keluwih (10%, 15%, 20%, and 25%) had a very significant effect on the color of shredded chicken produced. Least significant Different 0.05 test results of the effect of the addition of the concentration of keluwih on organoleptic values of shredded chicken could be described in Figure 1.

Figure 1 showed that the treatment of keluwih at a concentration of 10% produced a color of shredded chicken which was preferred by panelists with an organoleptic value of color 4.18 (like acceptance) which was very significantly different from the treatment of adding keluwih at a concentration of 15% (3.44), 20% (3.62) and 25% (3.31) at the level of acceptance rather like to like. While the lowest panelist acceptance of the color of shredded chicken was in the addition of 25% (3.31) keluwih concentration which is significantly different from the treatment of 10% (4.18) and 15% (3.44), but not significantly different from the treatment of 20% (3.62).

Nasir (2007) has conducted research on the analysis of quality and organoleptic tests of shredded beef for addition of keluwih (*Arctocarpus communis*). However, the results of his study showed no significant effect ($P>0.05$) on the color of beef floss. Panelists' assessments of color were ranged from 3.28 - 3.84 with a percentage of 82% - 96% of panelists rated it well.

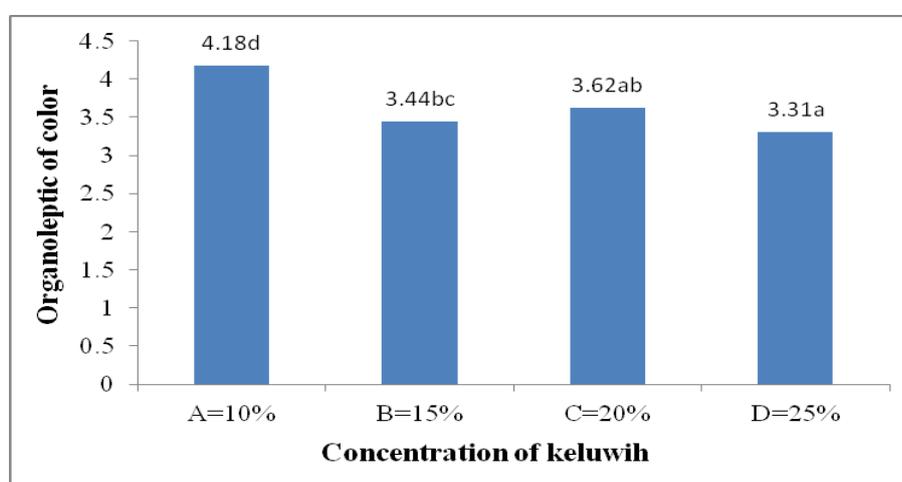


Fig. 1. Effect of addition of different concentrations of kelwih on organoleptic colors of shredded chicken

The results showed that the higher the addition of concentration of keluwih, the lower the level of panelists' preference for the color of shredded chicken produced. It was presumed that with more and more percentages of the addition of keluwih in shredded chicken so that the shredded chicken would turn blackish brown. The brownish color of the chicken floss was not only influenced by the basic color of the brown sugar used, it was also thought to be affected by the browning reaction at the time of cooking. Winarno, (1993) stated that the maillard reaction is a reaction between carbohydrates, especially reducing sugars and primary amino groups. The results of these reactions produced brown material.

Taste

Taste is one of the important components that influence consumers towards the acceptance of a product. Taste can affect the final decision of consumers to accept or reject a food product. A product or appearance that is interesting but tastes bad will definitely be left by the consumer, therefore testing of taste is very important.

The panelists' preference value for the flavors of shredded chicken ranged from 3.28 - 4.20 (acceptance rather like to like). The average organoleptic value for the overall taste of shredded chicken is 3.64 (acceptance rather like).

The results of the analysis of variance in the organoleptic value of flavors from shredded

chicken showed that the treatment of different types of keluwih (10%, 15%, 20%, 25%) had a very significant effect on the organoleptic taste of shredded chicken. Least Significant Different test 0.05 further test resulted of the effect of adding concentrations of fruit fruit to the organoleptic value of chicken floss taste could be seen in Figure 2.

Figure 2 showed that the highest panelist acceptance of chicken shredded taste was obtained in the treatment of 10% concentration of keluwih namely 4.15 (acceptance of likes) which was significantly different from the treatment of 20% concentration of keluwih ie 3.70 (acceptance of liking), but significantly different from the treatment of 15% concentration of keluwih (likeness) 3.36 and 25% (3.30) at the reception rather like. The lowest panelists acceptance value of chicken floss taste were at 25% (3.30) keluwih concentration which was significantly different from the treatment of 10% and 20% keluwih concentration, but not significantly different from the concentration treatment at 15% kelwih. This was presumably because the sweet taste caused by the addition of spices can also increase the panelists' acceptance of chicken floss. Shredded taste vary from sweet, rather sweet, depending on the addition of seasonings added to the food products produced. The taste of shredded chicken caused by spices used in the processing process makes shredded chicken have a more distinctive taste (Almatsier, 2009).

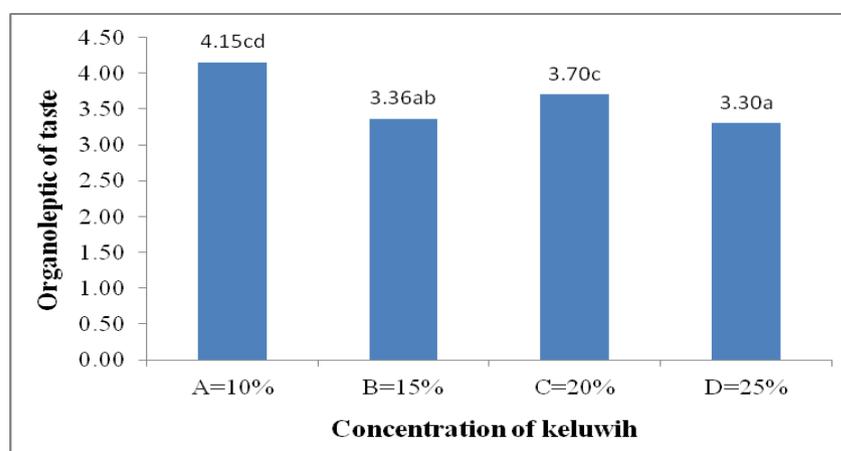


Fig. 2. Effect of addition of different concentrations of keluwih on organoleptic tests of shredded chicken taste

Aroma

The aroma organoleptic test is a sensory test which is usually considered after the general appearance of the product, when the consumer wants to consume it. The aroma of food can determine the deliciousness of the food.

The panelists' preferences for shredded aroma were ranged from 3.00 to 3.92. The average panelist preference for the aroma of shredded chicken is 3.36 (the level of acceptance is rather like). The highest average value of the panelists' response to the aroma of chicken floss was found in the treatment of 25% concentration of keluwih by 3.43 (acceptance rather like) while the lowest rating of 3.21 (acceptance rather like) in the treatment of additional 20% kelwih.

The results of the analysis of variance in organoleptic values of chicken shredded scents showed that the treatment of different types of kelp with different concentrations (10, 15, 20, 25%) on shredded chicken did not have a significant effect ($P > 0.05$) on the organoleptic value of chicken shredded scents produced.

The aroma caused by shredded chicken products was suspected due to the addition of keluwih, brown sugar and spices (spices) such as, garlic, candlenut, which will emit a distinctive aroma on the chicken floss when cooking occurs. The longer the cooking, the aroma caused by brown sugar and other spices was getting stronger so that gave a distinctive aroma to the shredded chicken, and caused the panelists to not be able to distinguish the aroma from the shredded chicken produced. Apart from the addition of spices, the aroma was also

influenced by the fat content of the food used (Diah 2005).

Texture

Texture is a factor that determines a product. The purpose of texture assessment is to determine the acceptance of the observer about the level of elasticity or elasticity of a product that can be assessed using the sense of touch, that is, through stimulation of touch.

The organoleptic value of the texture was ranges from 3.00 to 3.92 (acceptance rather like to like). The average organoleptic value of shredded chicken texture was 3.12 (acceptance rather like). The panelist preference value for the highest shredded chicken texture was 3.35 (acceptance rather like) in the treatment of adding 10% keluwih, while the lowest assessment was 3.13 (acceptance rather like) in the treatment of adding 25% keluwih.

The results of analysis of variance in organoleptic values of shredded chicken texture, showed that the treatment of chicken leaf flakes with different concentrations had no significant effect ($P > 0.05$) on the organoleptic values of shredded chicken texture produced. This was thought to be due to the texture of the keluwih which was not fresh because the fiber absorbed water easily. This situation caused high humidity from the food. The increase in water content was due to the increase in the proportion of breadworm added to the chicken floss. Keluwih has the characteristics of fiber that is almost like meat when compared with breadfruit. This was supported by Pitojo (2005) that shredded kluwih has an appearance (texture) that almost resembles beef floss.

Table 2. Addition of keluwih towards taste

Concentration of Keluwih	Organoleptic of Aroma
A = 10%	3.32 ± 0.24 ^{tn}
B = 15%	3.36 ± 0.19 ^{tn}
C = 20%	3.24 ± 0.05 ^{tn}
D = 25%	3.32 ± 0.37 ^{tn}

Note: tn = no real effect

Table 3. Addition of keluwih towards the texture

Concentration of Keluwih	Organoleptic of Texsture
A = 10%	3.37 ± 0.36 ^{tn}
B = 15%	3.14 ± 0.02 ^{tn}
C = 20%	2.97 ± 0.46 ^{tn}
D = 25%	3.09 ± 0.08 ^{tn}

Note: tn = no real effect

4. CONCLUSION

Based on the results of the study the effect of giving different concentrations of keluwih in the process of making shredded chicken, it can be drawn some conclusions as follows:

1. Factor addition of keluwih with different concentrations had a very significant effect on the organoleptic value of color and taste, but has no significant effect on the organoleptic value of the aroma and texture of the shredded chicken produced.

2. Adding as much as 10% keluwih produced shredded chicken with the best organoleptic value with the following product characteristics: color 4.18 (acceptance of likes), taste 4.15 (acceptance of likes), aroma 3.32 (acceptance of rather likes), and texture 3.37 (acceptance of somewhat likes).

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