

Panelists' Assessment of Fish Chili Sauce with Different Packaging and Shelf Time on Quality

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ABSTRACT

Panelists are a reflection of consumers in assessing the suitability of a product. Organoleptically, panelists can determine quality fish chili sauce. In this research, Fish chili Sauce contains 10% fermented tuna meat, so it has a distinctive taste. In storage for three weeks, the quality of the fish sauce will change. The extent of the changes that have occurred will be assessed by the panelists. The aim of the research is to get quality fish chili sauce in certain packaging with the longest shelf life. Using a nested experimental method with two factors, factor I type of packaging, factor II storage time, repeated three times. The best research results, Fish chili Sauce with Glass Jar Packaging with a shelf life of three weeks got an Organoleptic Value of Taste = 5.6 (Kinda Like it), Color Value = 6.0 (Like), Aroma Value = 5.8 (Kinda Like it) and Value Overall Acceptance = 5.8 (Kinda Like it).

INTRODUCTION

The general view is that Chili Sauce is a type of side dish made from chilies, which has a spicy taste. In fact, nowadays there are many types of Chili Sauce which are named based on the dominant basic ingredients used, the level of spiciness, additional ingredients used, regional traditional chili sauce. Various kinds of Chili Sauce that we often use in the community include tomato chili sauce, sea food chili sauce, chili chili sauce, onion chili sauce, mango chili sauce, shrimp paste chili sauce, spicy chili sauce, super spicy chili sauce, fish chili sauce, fried potato chili sauce and many others. Each type of Chili Sauce is unique in terms of taste, color and texture, according to the creator's wishes to be able to display different variations of Chili Sauce.

According to SNI 01-2976-2006, it is said that Chili Sauce is a processed product made from ripe chilies (*Capsicum annum* L) which is usually used as a flavoring (BSN, 2006). Chili Sauce has a different shelf life, which usually has a relatively short shelf life, but there are also sauces that have a long shelf life by adding artificial preservatives. The main cause of chili sauce spoiling quickly or having a short shelf life is due to the activity of spoilage bacteria, therefore it is necessary to use ingredients that contain anti-bacterials, both natural and artificial (Mahardika, et al, 2021)

From the various types of chili sauce available, researchers made fish chili sauce which has the distinctive taste of fermented fish. Fermented products have a very distinctive taste so that if they are mixed with the basic fish chili sauce ingredients, new fish chili sauce Products will be created to increase the diversity of types of fish chili sauce. Fermentation is a complex microbial process, especially Lactic Acid Bacteria, which causes chemical changes that lead to changes in taste and have a longer shelf life (Sumarmono and Setyawardani, 2020). In the fish chili sauce research, researchers did not use artificial preservatives, only relying on natural preservatives such as sugar, salt and also the application of technology to reduce the water content of the sauce to a minimum. Good packaging materials are also needed to maintain the stability of the quality of the fish chili sauce which is made so that it has a long shelf life. For this reason, the researchers used three types of packaging materials for the fish chili sauce and stored it at room temperature, to get the longest shelf life with quality fish chili sauce. liked by the Panelists.

THEORETICAL REVIEW

Several researchers make fish chili sauce with various variations, such as stingray fish chili sauce which is made by mixing several basic sauce ingredients such as crushed shallots, garlic, large chilies, mixed with shredded smoked stingray fish which will give a different taste and appearance. different (Affandi D.R. et al, 2020). Chili Sauce with different variations is made from tuna fish which is steamed first and then shredded then blended until smooth, mixed with basic chili sauce ingredients such as curly chilies, shallots, garlic and others, mashed and fried. Tuna fish meat that is finely ground and then mixed with fried chili sauce will produce a different taste of chili sauce

(Poernomo D., et al, 2019). Making chili sauce is also made by mixing the basic ingredients for chili sauce (onions, garlic, large red chilies, etc.) which are mashed and fried, mixed with fermented tuna fish which has been mashed, producing fish chili sauce with a different taste (Darmadi N.M, et al. , 2023). In general, the chili sauce made has a relatively short shelf life. Several journals state that chili sauce made from smoked stingray fish stored in a jar has a shelf life of up to 197.96 hours or around 8 days (Affandi D.R. et al, 2020). From Anchovy Fish Chili Sauce which is made by mixing the basic ingredients of finely ground chili sauce with fried anchovies, it has a maximum shelf life of 3 weeks (Mansyur M.H., Sri Hajriani A.R, 2020), Meanwhile, Fish Chili Sauce is made by adding fermented tuna fish to the basic ingredients of Fish Chili Sauce. Fish Chili Sauce is obtained with a shelf life of more than one month (Darmadi N.M, et al, 2023).

METHODOLOGY

This research uses a descriptive method, using three types of packaging with storage for 1, 2 and 3 weeks at room temperature, and observations are carried out every week. The observations involved 10 untrained panelists, but the panelists knew the chili products and had knowledge about the quality of the chili sauce in terms of taste, color, aroma and overall acceptability. Data regarding Packaging Type, Organoleptic/Subjective Assessment from Panelists can be seen in Figure 1 and Table 1 below.



Figure 1. Three types of fish chili sauce packaging used for storage at room temperature

RESULTS AND DISCUSSION

After carrying out organoleptic analysis of the ten (10) panelists using the Hedonic Scale and Numerical Scale used, the results were obtained as shown in Table 1 below.

Table 1. Organoleptic/Subjective Value of Fish Chili Sauce during Storage at room temperature

Long Save	Packaging Type	Average Taste Rating		Average Color Value	Average Aroma Value	Overall Admissions Average
K	Kontrol	5,9		5,8	6,0	6,0
M 1	A	6,0		6,0	5,9	6,0
M 2		5,8		6,0	5,9	6,0
M 3		5,6		6,0	5,8	5,8
M 1	B	5,9		6,0	5,8	6,0
M 2		5,9		6,0	5,8	6,0
M 3		5,7		6,0	5,6	5,8
M 1	C	5,8		6,0	5,8	5,8
M 2		5,7		6,0	5,5	5,7
M 3		5,6		6,0	5,2	5,5

Information :

K = Control (First assessment from panelists before storage is carried out)

M 1 =Week 1 Storage

M 2 = 2nd Week Storage M 3 = Storage Week 3

A = Fish Sauce Packaging in Glass Jars B = Fish Sauce Packaging in Plastic Jars C = Fish Sauce Packaging with Standing Food

Table 2. Hedonic Scale and Numerical Scale

Hedonic Scale	Numeric Scale
Really like	7
Like	6
Kinda like it	5
Normal	4
Kinda don't like it	3
Do not like	2
Very dislike	1

From the results of the Panelists' Assessment and when compared with the Hedonic Scale used, it can be seen that the Fish Chili Sauce at the beginning of its manufacture received a score in the range (5.8 - 6.0) which shows that the panelists gave an assessment that they liked and liked the Fish Chili Sauce somewhat in terms of taste and color. , aroma and overall acceptability. The fish chili sauce is brick red/brownish red, with the aroma of fermented fish. After storage with a shelf life of 1

week to two weeks, the fish chili sauce packaged in glass jars and plastic jars was still preferred by the panelists, only with the Standing Food packaging did the fish chili sauce receive a somewhat favorable rating because there were three (3) repeat treatments showing a hint of color. White indicates the presence of fungus that is about to grow. Organoleptically, the use of Standing Food Packaging appears to be less than tight during storage because there are still small holes which have the opportunity for outside air to enter the fish chili sauce, which can affect the taste, color and aroma of the fish chili sauce and have an impact on the overall acceptability of the Fish Chili Sauce.

DISCUSSION

The making of fish chili sauce in this research combines the flavors of fermented mackerel fish which has a distinctive taste, using natural preservatives, to obtain maximum shelf life of the fish chilli sauce with certain packaging and stored for three weeks at room temperature. During storage, Fish Chili Sauce received ratings for Taste, Aroma, Color and Overall Acceptability ranging from Somewhat Favored to Favored by the panelists. The panelists' assessment of the Fish Chili Sauce before storage (Control) also received an assessment from the panelists between Somewhat Liked to Liked, this means that the Fish Chili Sauce made during three weeks of storage has not experienced any changes. Fish chili sauce packaging using Standing Food looks like mold is growing, because there is a small gap that allows air to enter and affect the fish sauce. From the research results, the best packaging for storing fish chili sauce is to use glass jars or plastic jars, because they are able to protect the sauce from the influence of outside air.

Fish Chili Sauce can last up to three weeks due to the use of natural preservatives such as salt and granulated sugar, which can control the water content of the fish chili sauce. Apart from adding flavor to the chili sauce, salt is also useful for reducing the water content of the chili sauce because salt can draw out the water content from the fish chilli sauce, likewise granulated sugar can function to give flavor and balance the sweet and sour taste of the fish chilli sauce and also binds the water from the fish chilli sauce so that becomes bound water which is difficult for microbes to utilize (Sjarif, S.R., Andi Rosmaeni. 2019). Furthermore, it is also said that the use of tomatoes, apart from giving color to the fish chili sauce, also provides antioxidant substances to the fish chilli sauce because it contains 30-200 mg/kg fresh lycopene and also carotene and several vitamins such as A, C and E. This means that the preservation that occurs does not use artificial chemicals which have recently been avoided by consumers because they are worried that they could cause carcinogenic effects (Junita D., Maryam Novitasari, 2019).

CONCLUSIONS AND RECOMMENDATIONS

From the results of the panelists' observations and assessments for storing fish chili sauce, it is best to choose a jar/jar type of packaging, either made of glass or plastic, because this type of packaging does not fall easily and has a tight lid, thus providing very little opportunity for air to enter the packaging.

Additional observations made by researchers showed that the fish chilli sauce was still in good condition after being stored for four (4) months.

FURTHER STUDY

Research is needed which has not been carried out by researchers, namely, the use of white fleshed fish for fermentation to get fish chili sauce that is brighter in color. Further research was also carried out to obtain quality fish chili sauce with a longer shelf life using packaging that was recommended in this research. Research is also needed to analyze the shelf life of fish chili sauce using the ACCELERATED SHELF LIFE TEST method (Nurminabari I.S., Sumartini and Nadyne Kusumah, 2022).

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