



Ushering in the Age of Endemic

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SAMBAL BILIS JAM

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ABSTRACT

Jam is a condiment that may enhance food's taste and is popular as a breakfast spread. Jam comes in many flavors and is usually sweet. This study developed Sambal Bilis Jam, a spreadable savory jam, made without artificial sweeteners or chemicals and is convenient to use in meals and cuisines. This product is suitable for all ages, locally and worldwide, especially for savory food lovers. Spicy anchovies were used to make jam because they reduce cholesterol and heart disease risk. Sambal Bilis Jam requires boiling spicy anchovies and gelling using pectin. Following production, 55 respondents participated in three sensory evaluations to evaluate customer preferences. Sensory assessment includes color, scent, texture, taste, and overall flavor. In the first sensory assessment, control variation, the jam contains 37% water, while the second variation has 39% water, and the third, 42% water. Sambal Bilis Jam with 37% water was preferred by respondents. Sambal Bilis Jam may be a market-fresh shape and taste of jam.

Keywords: *jam, anchovies, spicy anchovies, artificial sweeteners.*

1. INTRODUCTION

Sambal is a condiment made with garlic, shallots, dried chilies, and water. Typically, it is used as a condiment for nasi lemak and bread. Meanwhile, jam is a type of food that is made by boiling one or more types of sound fruits, whether raw, processed, or semi-processed, with a sweetener that is allowed, with or without added pectin (Liza, 2019). In Malaysia, there are a lot of jams sold in the market such as strawberry jam, orange jam, and apple jam. All of these are typically sweet and fruity. Sambal Bilis Jam is a food innovation that can be eaten with a variety of foods including bread, crackers, and snacks. In the making of Sambal Bilis Jam, we used pectin powder to make the sambal bilis set.

The innovation of this product is to develop a new savory product in jam and spreadable for convenient usage, and to evaluate the acceptability of Sambal Bilis Jam. Pectin is one important ingredient in jam making. People use pectin as a "gelling agent," which means it makes things like jam sets (Shoemaker, 2019). Pectin is a type of fiber, but it does not have many calories or nutrients in it. It is generally utilized as a thickening in food production and home cookery, and is used in both commercial and handmade jams, jellies, and preserves ("Pectin for Jam", 2007). Therefore, Sambal Bilis Jam can be commercialized for people that love savory food products and it will ease the consumer to eat, as the packaging is convenient, and it is ready to eat anytime and anywhere.

2. METHODOLOGY

2.1 Materials and Method

The preparation of spicy anchovies starts with measuring all the ingredients of spicy anchovies accordingly and preparing the sambal paste by blending shallots, garlic, dried chilies, and adding some water until it makes a thick paste. Oil is heated in a sauté pan over medium heat, then anchovies are fried until crisp and golden brown. Take them out and put them aside. Using the same sauté pan, sauté the sambal paste until the oil separates. Add tamarind juice, pandan juice, and fried anchovies and season with salt and sugar. Meanwhile, the preparation of gelling process is by using pectin. Measure the pectin and water according to the prescribed amount and dissolve the pectin in water. Combine the spicy anchovies and melted pectin and cook both according to the formula. Cool the Sambal Bilis Jam before packaging in the container. Then place the jam in the refrigerator until it is completely set.

The sensory evaluation has been conducted through 55 respondents consisting of students from various courses and semesters using a hedonic test. The use of the hedonic test in this sensory evaluation allows respondents to express their sensory perceptions more freely, reduces contextual effects, and accurately assesses acceptance. This test is also appropriate for evaluating the sambal bilis jam because respondents can use a score ranging from 1 (extremely dislike) to 9 (extremely like) to identify the samples that they like or dislike the most. The goal of sensory evaluation is to determine consumer approval of a product based on its color, scent, texture, taste, and overall flavor. Three sensory assessments were done in this investigation where the judgments are different based on the volume of water in the jam. The different percentages of water content that are used for those three sensory judgments are 37 percent, 39 percent, and 42 percent for sensory assessment 1, 2, and 3 respectively. The samples were classified with a three-digit sample code and Sample A, Sample B, and Sample C were assigned to the samples. Sample A has 1150 grams of water in it, Sample B has 1250 grams of water, and Sample C has 1400 grams of water. These three samples all have the same quantity of spicy anchovies and pectin.

2.2 Sensory Evaluation Procedure

Sensory evaluations were carried out at Universiti Teknologi MARA Terengganu Branch, Dungun campus with the findings being analyzed by a panel of students and academics from the university. A three-digit code was used to distinguish each sample from the others. Color, aroma, texture, taste, and overall flavor are among the attributes evaluated by the respondents. Before tasting each item on the menu, the respondents were advised to rinse their mouths out. On a nine-point hedonic scale, respondents rated the product's acceptability. This time, a nine was considered exceedingly positive, while a one was considered extremely unfavorable. Traditional quality judging method was employed using a scorecard with "like" or "dislike" judgments. Also, to compare the formulas for cooking procedures, the mean score for the test was used. Table 1 summarizes the sensory evaluations.

3. FINDINGS

3.1 Product Characteristics



Figure 1 Sambal Bilis Jam

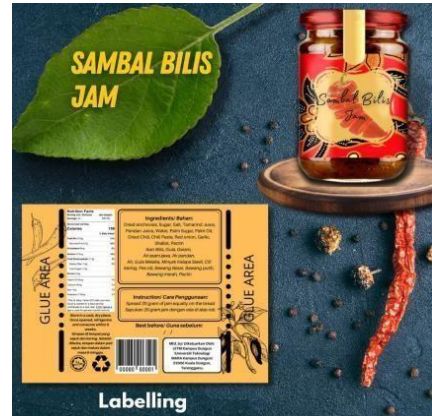


Figure 2 The packaging and Labeling

Sambal bilis jam is a ready-to-eat product that does not need cooking before consumption. This product is distinguished by its savoury taste, which is uncommon in jam. Because jam often has a sweet flavor, but sambal bilis jam has a salty and spicy flavor that locals like. This product's appearance is identical to that of standard sambal bilis, but its texture is comparable to that of standard jam.

3.2 Sensory Analysis

Characteristics	Control with 37% of water	Variation 1 with 39% of water	Variation 2 with 42% of water
Colour	7.5	6.9	6.9
Aroma	7.2	6.7	6.7
Texture	7.3	6.6	6.4
Taste	7.2	6.8	6.8
Overall flavour	7.6	6.9	6.6

Table 1 Preliminary Sensory Result

Three variants of the jam were used: 37% water, 39% water, and 42% water. Among the different Sambal Bilis Jam varieties, the one with 37% water had the highest mean score. The variations with 39% and 42% water scored the same point. The amount of water added may have modified the color of the sambal. The respondents preferred Sambal Bilis Jam with 37% water added for texture. High water content resulted in excellent jam texture. For aroma characteristics, the most preferred is the version with 37% water. The means of flavor for 37%, 39%, and 42% water are 7.2, 6.8, and 6.8 respectively. It shows that the flavor in the Control

sample was superior. Finally, Control had the highest mean acceptance score, followed by Variations 1 and 2. The Control group, which contained 37% water, had a higher total score.

4. CONCLUSION

The respondents preferred the color, fragrance, texture, taste, and overall acceptance of Sambal Bilis Jam made with 37% water. High water content made a smooth jam. Water clearly changed the qualities of Sambal Bilis Jam, thus to produce a great Sambal Bilis Jam, the water content must be perfect. The colour, fragrance, texture, and taste may be affected if too much water is used. Therefore, sambal bilis jam can be marketed to consumers who enjoy savory foods since it is different from normal jam where it is usually sweet. Additionally, because the package is simple and ready to eat anytime, anyplace, it will make eating easier for the user. For locals, this product will grow and have the potential to reach neighbor countries like Thailand and Indonesia since their taste preferences is similar to Malaysian.

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