

The Influence of Asam Sunti Instant Seasoning on the Sensory Attributes of Fried Rice

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Abstract: Asam sunti is a traditional Acehese seasoning made from dried bilimbi fruit (*Averrhoa bilimbi* L.). This study aims to examine the organoleptic characteristics, standard recipe, consumer acceptance, and shelf life of instant fried rice seasoning with the addition of asam sunti. A quantitative approach was employed using an experimental method. Data were collected through observation tests by five expert panelists (Culinary Arts Lecturers, Family Welfare Education Department, FKIP, Syiah Kuala University) and an acceptance test by 30 general consumer panelists. The results showed that the third treatment (BA3) had the best organoleptic characteristics in terms of color, aroma, texture, and taste, according to both expert and consumer panelists. The BA3 fried rice had a mocha-brown color, a spiced aroma, a savory taste, and a dry texture. The research hypothesis was accepted, as the addition of asam sunti had a significant effect on the organoleptic characteristics and consumer acceptance. Both expert sources and consumers favored the BA3 treatment because it provided a unique and appetizing traditional flavor. In conclusion, the asam sunti instant fried rice seasoning (BA3) has the potential to be developed as a practical, long-lasting, and widely favored Acehese culinary product. This study employed a quantitative approach using an experimental method conducted at the Culinary Education Laboratory, Faculty of Teacher Training and Education (FKIP), Syiah Kuala University. The object of the study was fried rice with instant seasoning made from asam sunti. The subjects consisted of 4 expert panelists and 30 general consumer panelists. Data collection was carried out through organoleptic tests (color, aroma, texture, and taste) using a hedonic scale and consumer acceptance scale. The data were statistically analyzed using one-way ANOVA and LSD (Least Significant Difference) test at a 0.05 significance level with the assistance of SPSS software version 26.0. The results showed that the third treatment (BA3) produced fried rice with instant seasoning made from asam sunti that received the highest organoleptic scores in terms of color, aroma, texture, and taste. The BA3 recipe used a balanced composition of ingredients and spices, resulting in an appealing color, strong spiced aroma, dry texture, and savory taste favored by both expert panelists and consumers. *Asam sunti* instant fried rice seasoning (BA3) has the potential to be developed as a practical, long-lasting, and widely accepted Acehese culinary product.

Keywords: Asam sunti; Fried rice; Instant seasoning

Introduction

Indonesia is a country rich in natural resources. Its location along the equator gives it a tropical climate, allowing a wide variety of plants to grow well. The presence of plants is essential for humans and other living beings, serving as a source of food and habitat.

There are many food ingredients that can be processed into healthy meals. These food ingredients can help boost the immune system, enabling the body to stay protected from diseases.

Aceh, located at the northern tip of Sumatra Island, offers a variety of unique culinary experiences. The region is known for its abundant natural resources and

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fertile soil, which support the growth of several spices and seasonings that are unique to Aceh, well-known, and frequently used by the local community in cooking. One of the essential spices in traditional Acehese cuisine is *asam sunti*, made from *belimbing wuluh* (bilimbi fruit). In Indonesia, there are two common types of starfruit: the sweet starfruit (*Averrhoa carambola*) and the sour bilimbi (*Averrhoa bilimbi* L.) (Rugayah & Sunarti, 2008; Prahasta, 2009; Mahmud, 2019; Agustin & Putri, 2014; Yulita, 2011; Pertiwi et al., 2020; Aristyantari et al., 2022; Parikesit, 2011).

Belimbing wuluh (bilimbi) contains sugar compounds, phenolics, calcium ions, amino acids, citric acid, vitamins, and cyanidin 3-o-h-D-glucoside. In addition, it also contains flavonoids and triterpenoids, which can act as antibacterial agents (Aseptianova et al., 2020; Aseptianova & Yuliany, 2020; Jessica, 2022; Setiawati & Sari, 2020; Alhassan & Ahmed, 2016; Carina et al., 2012; Karon et al., 2011; Zakaria et al., 2007; Norhana et al., 2009). Every 100 grams of bilimbi contains 25 mg of vitamin C, 10 mg of calcium, and 10 mg of phosphorus (Rahmadhia & Shinta, 2024; Fitri et al., 2017; Peris et al., 2013; Khalisa et al., 2021; Komarayanti et al., 2020; Patil et al., 2013; Gunawan et al., 2013; Pushparaj et al., 2000).

Bilimbi is a fruit that can bear fruit three to four times a year. When ripe, it must be harvested quickly due to its tendency to fall easily from the tree and spoil rapidly. The fruit also contains a high water content, making its shelf life relatively short. Therefore, many Acehese people preserve bilimbi by sun-drying it with the addition of salt. This method allows bilimbi to be stored for more than a year. Once it undergoes this drying and salting process, the bilimbi becomes known as *asam sunti*.

Asam sunti is a traditional Acehese kitchen spice made from dried *belimbing wuluh* (*Averrhoa bilimbi* L.). This product is fermented using dry salting, resulting in a sour and slightly salty flavor, brown color, soft and slightly chewy texture (Muzaifa, 2013, Xu et al., 2017; Wong & Wong, 2011). It is commonly used in various Acehese dishes such as *asam keueng*, *ikan masak Aceh*, *eungkot keumamah*, *pliek u*, *pepes ikan*, and others. Moreover, the Acehese often use *asam sunti* as a substitute for tomatoes due to its similar sour taste.

Asam sunti is commonly found in traditional markets across Aceh. However, it is also widely available in almost every household, as it is considered an essential ingredient in Acehese cooking. *Asam sunti* can be regarded as an indigenous product of Aceh, serving as an umami attribute or flavor enhancer (Karyani et al., 2024; Utami et al. 2023; Kemalawaty et al., 2022).

Fried rice is a traditional Indonesian dish adapted from Chinese cuisine. Indonesian fried rice is typically

orange in color, made with shallots, chili peppers, and various other spices. It is considered one of the most delicious foods in the world, ranked just after *rendang*. Indonesian fried rice even surpassed Thai fried rice, which was ranked 24th (Dewi, 2022). Thai-style fried rice is known for its mild flavor, making it popular among tourists who prefer non-spicy food.

Fried rice is a very practical dish to prepare, often made using leftover rice from the previous day. This makes it a popular choice among people looking to reduce food waste and save cooking time. Fried rice can be enjoyed by all age groups and can be tailored to different tastes and dietary needs, whether for children or adults. It can also be enriched with nutritious proteins and vegetables.

The flavor of fried rice varies from region to region, with each area offering its own unique and distinctive seasoning. Although some base ingredients such as shallots, garlic, chilies, and salt are commonly used, many regions add their own traditional spices to create a unique character. Fried rice seasoning with various flavors and characteristics is now widely available, as it can be packaged into instant seasoning that is practical and easy to carry. As a result, many people choose to cook fried rice for breakfast because it is quick and convenient.

Based on the aforementioned background, an innovation was developed: instant fried rice seasoning using *asam sunti*, a traditional spice from Aceh. The addition of *asam sunti* is expected to create a new flavor profile for fried rice and to be well accepted by the wider community. In addition to its beneficial nutritional content, *asam sunti* can also enhance the aroma, taste, color, and shelf life when added to instant fried rice seasoning. This seasoning can also be used in various other dishes—not only fried rice, but also fried noodles, *kwetiau*, and even as a flavoring in snacks such as chips to create a new taste experience.

The objectives of this study are to identify the organoleptic characteristics, formulate a standard recipe, and assess consumer acceptance

Method

Study Design

This study employed a quantitative approach. Quantitative research is a method based on the premise that all phenomena can be measured; it is used to investigate specific populations or samples. Data collection is conducted using assessment instruments, while data analysis is quantitative/statistical in nature, aiming to describe and test the predetermined hypotheses (Purwono et al., 2019).

This type of research utilized an experimental method. An experiment is a research method aimed at

explaining and predicting the effects that occur in one variable when a specific treatment is applied to another variable (Sanjaya, 2015).

The research was conducted in the Culinary Education Laboratory, Department of Family Welfare Education, Faculty of Teacher Training and Education (FKIP), Syiah Kuala University, Banda Aceh. Organoleptic tests were carried out in the organoleptic testing laboratory of the Culinary Education Department. The study was conducted over 2.5 months, including 1.5 months of data collection and one month of data processing, following the issuance of the research permit.

The subjects of the study consisted of four expert panelists (Culinary Education Lecturers) and 30 general consumer panelists, while the object was fried rice products made with instant seasoning based on *asam sunti*. The independent variable in this study was the use of *asam sunti* instant seasoning, while the dependent variables included organoleptic characteristics (color, aroma, texture, taste), standard recipe formulation, and product shelf life.

The ingredients used included dried *asam sunti*, shallots, garlic, dried shrimp (*ebi*), and various kitchen seasonings such as soy sauce, oyster sauce, and margarine. The equipment used included a scale, blender, gas stove, frying pan, knife, and packaging materials. All tools and ingredients were prepared according to the research procedure.

Data Collecting

The data collection process was carried out in three stages: preliminary (preparation of tools and ingredients), treatment (processing of seasonings with various compositions of *asam sunti*), and testing (organoleptic and shelf-life tests). The organoleptic test was conducted by panelists using a 7-point hedonic scale (1-7), while the consumer acceptance test used a 5-point scale (1-5). The evaluation covered the color, aroma, texture, and taste of the fried rice

Statistic Analysis

The data obtained were analyzed using one-way ANOVA, followed by the Least Significant Difference (LSD) test at a significance level of 0.05 to determine the significant effect of *asam sunti* addition on the characteristics of fried rice. Data processing was carried out using SPSS software version 26.0. Descriptive analysis was used to interpret the results of interviews, observations, and documentation in order to draw conclusions from the patterns that emerged during the study.

Research Procedure

The Asam Sunti Production Process

To prepare asam sunti, start by selecting fresh bilimbi (*Averrhoa bilimbi*) fruits. Remove the stalks and wash the fruits thoroughly. Next, dry the bilimbi under the sun until they become wilted. Once wilted, sprinkle the bilimbi with salt and let them sit overnight to absorb the salt. The next day, sun-dry the salted bilimbi again. After this, repeat the salting process for a second time, and then dry the fruits once more under the sun until they are completely dry. Once dried, the asam sunti is ready to use.

The Asam Sunti Instant Seasoning Production Process

To prepare instant asam sunti seasoning, begin by preparing all ingredients and tools. Weigh all ingredients, then peel the shallots, garlic, and Bombay onion (2 minutes). Next, wash all peeled ingredients thoroughly, including the asam sunti and dried shrimp (*ebi*) (2 minutes). Blend all the cleaned ingredients into a fine paste, then heat a frying pan (5 minutes). Add cooking oil to the pan and immediately pour in the blended seasoning (1 minute).

Cook the mixture until the moisture reduces, then add additional ingredients such as salt, sugar, ground pepper, oyster sauce, sweet soy sauce, light soy sauce, sesame oil, and fish sauce. Let this cook thoroughly until the flavors combine (35 minutes). Stir well and add margarine, then continue cooking until the mixture releases its oil (25 minutes). The finished seasoning will typically appear yellowish-brown in color. Finally, the instant asam sunti seasoning is ready for use.

The Fried Rice Preparation Process Using Asam Sunti Instant Seasoning

To make fried rice with instant asam sunti seasoning, begin by washing the rice thoroughly. Cook the rice until fully done. Let the rice cool down completely, or you can also use rice that has been left overnight for best texture. Next, heat a frying pan and add a small amount of cooking oil.

Once the oil is hot, add the cooked rice and mix in the instant asam sunti seasoning. Stir well until the seasoning is evenly distributed. Your fried rice with instant asam sunti seasoning is now ready to serve.

Result and Discussion

Sensory Evaluation

In this observation test, four Culinary Education lecturers served as expert panelists to evaluate the fried rice product made with the addition of asam sunti instant seasoning. The results are presented in Table 1.

Table 1. Results of Expert Panel Observation on Fried Rice with Asam Sunti Instant Seasoning

| Aspects Assessed | Treatment | | |
|------------------|-----------|------|------|
| | BA1 | BA2 | BA3 |
| Colour | 4.8 | 5.8 | 6.6 |
| Aroma | 4.7 | 6 | 6.8 |
| Texture | 5.9 | 6.3 | 6.5 |
| Taste | 5.25 | 6 | 6.8 |
| Total | 20.65 | 24.1 | 26.7 |
| Average | 5.2 | 6 | 6.7 |

Source: Primary data from observation tests, processed from expert panelists (2025)

Note

BA1 = Fried rice with instant seasoning and 50 g of *asam sunti*

BA2 = Fried rice with instant seasoning and 60 g of *asam sunti*

BA3 = Fried rice with instant seasoning and 70 g of *asam sunti*

Observation Test on the Color of Fried Rice with Asam Sunti Instant Seasoning

Figure 1 shows the average scores from the observation test of fried rice with asam sunti instant seasoning, based on the expert panelists' evaluation of the color aspect.

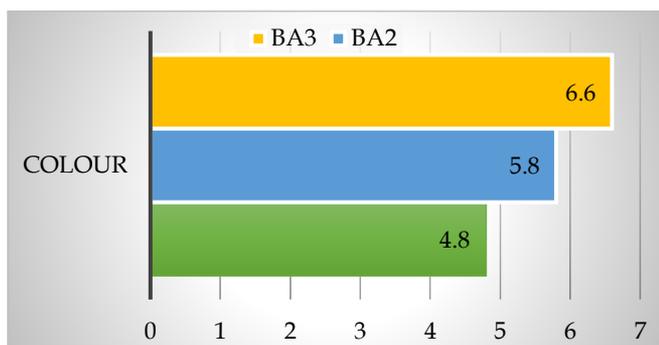


Figure 1. Average expert panel ratings on the color of fried rice with asam sunti instant seasoning

The results of the observation test conducted by four expert panelists on the color of fried rice with asam sunti instant seasoning showed that the highest score was obtained from treatment BA3, which included 70 g of *asam sunti*. This treatment received the highest average score of 6.6, with a mocha brown color.

Aroma Observation Test of Fried Rice with Asam Sunti Instant Seasoning

Figure 2 presents the average scores from the observation test of fried rice with asam sunti instant seasoning, based on the expert panelists' evaluation of the aroma aspect.

The results of the observation test conducted by four expert panelists on the aroma of fried rice with asam

sunti instant seasoning showed that the highest score was obtained from treatment BA3, which included 70 g of *asam sunti*. This treatment received the highest average score of 6.8, with a very fragrant, spiced aroma.

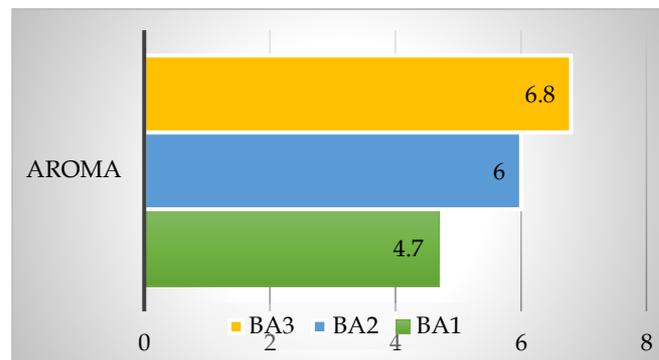


Figure 2. Average expert panel ratings on the aroma of fried rice with asam sunti instant seasoning

Texture Observation Test of Fried Rice with Asam Sunti Instant Seasoning

Figure 3 presents the average scores from the observation test of fried rice with asam sunti instant seasoning, based on the expert panelists' evaluation of the texture aspect.

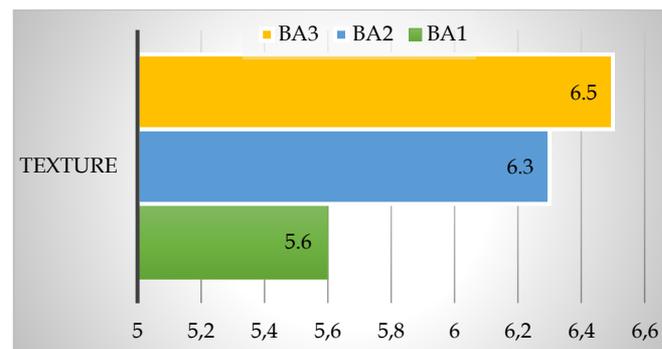


Figure 3. Average expert panel ratings on the texture of fried rice with asam sunti instant seasoning

The results of the observation test conducted by four expert panelists on the texture of fried rice with asam sunti instant seasoning showed that the highest score was obtained from treatment BA3, which included 70 g of *asam sunti*. This treatment received the highest average score of 6.5, with a dry texture.

Taste Observation Test of Fried Rice with Asam Sunti Instant Seasoning

Figure 4 presents the average scores from the observation test of fried rice with asam sunti instant seasoning, based on the expert panelists' evaluation of the taste aspect. The observation conducted by the researcher with four expert panelists on the taste of fried rice with asam sunti instant seasoning showed that the highest score was obtained from treatment BA3, which

included 70 g of *asam sunti*. This treatment received the highest average score of 6.8, with a very savory taste.

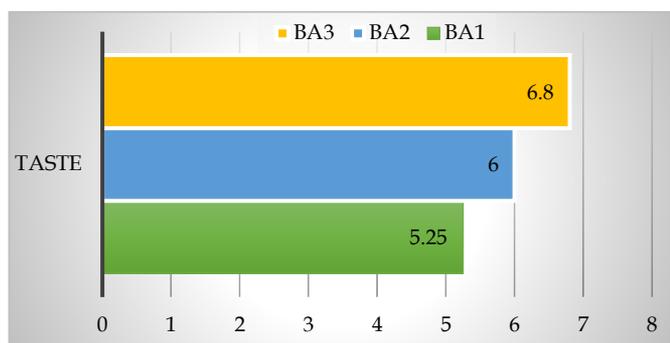


Figure 4. Average expert panel ratings on the taste of fried rice with asam sunti instant seasoning

Figure 5 presents the average observation results of the overall organoleptic characteristics (color, aroma, texture, and taste) of fried rice with asam sunti instant seasoning.

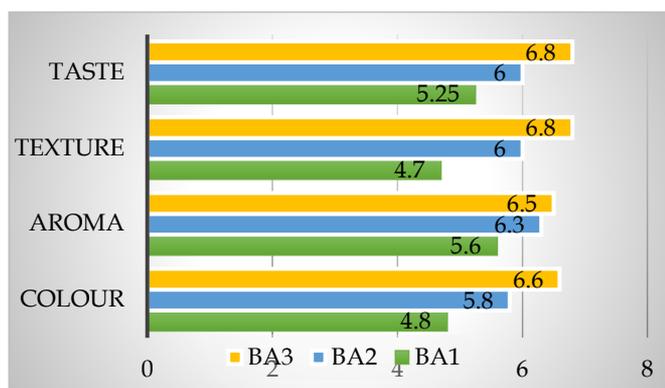


Figure 5. Average expert panel ratings on the overall characteristics of fried rice with asam sunti instant seasoning

Note:

BA1 = Fried rice with instant seasoning and 50 g of *asam sunti*

BA2 = Fried rice with instant seasoning and 60 g of *asam sunti*

BA3 = Fried rice with instant seasoning and 70 g of *asam sunti*

Based on the observation results shown in Table 1 for the fried rice product with the addition of *asam sunti*, assessed in terms of color, aroma, texture, and taste, the highest overall score was obtained by BA3 (with 70 g of *asam sunti*). The average scores for BA3 were as follows: color 6.6 (mocha brown), aroma 6.8 (intensely spiced), texture 6.5 (dry), and taste 6.8 (very savory).

Acceptanlity Test

The acceptability test for the fried rice product with asam sunti instant seasoning was conducted with 30 consumer panelists using a 5-point rating scale (strongly dislike, dislike, neutral, like, and strongly like). The

assessment focused on color, aroma, texture, and taste, and the data were processed using one-way ANOVA.

Consumer Acceptance of the Color of Fried Rice with Asam SuntI Instant Seasoning

The results of the consumer acceptability test on the color of fried rice with asam sunti instant seasoning are presented in Table 2.

Table 2. One-Way ANOVA of Consumer Acceptance Level on the Color of Fried Rice with Asam SuntI Instant Seasoning

| Source of Variation | Degrees of Freedom | Sum of Squares | Mean Square | t-count | t-table |
|---------------------|--------------------|----------------|-------------|---------|---------|
| Treatment | 2 | 22.4 | 11.2 | 32* | 1.70 |
| Error | 87 | 30.2 | 0.35 | | |
| Total | 89 | 52.6 | 11.55 | | |

Note: *Significantly different (Primary Data, 2025)

Based on the ANOVA test results presented in Table 2, to determine the level of difference in consumer acceptance of the color of fried rice with asam sunti instant seasoning, we refer to the values $t_{count} = 32$ and $t_{table} = 1.70$. Since $t_{count} > t_{table}$ it indicates that there is a significant difference in the color of fried rice with the addition of *asam sunti*. The average consumer panelist acceptance of the color can be seen in Table 3.

Table 3. Average Consumer Panelist Acceptance of the Color of Fried Rice with Asam SuntI Instant Seasoning

| Treatment | Level of Significance |
|---------------------|-----------------------|
| 1 | 3.4a |
| 2 | 3.9b |
| 3 | 4.2b |
| LSD _{0.05} | 0.48 |

Source: Primary Data (2025)

Based on LSD_{0.05} test in table 3, it can be explained that there are differences in color between the fried rice with asam sunti instant seasoning at 10%, 20%, and 30% concentrations, as shown in Figure 6.

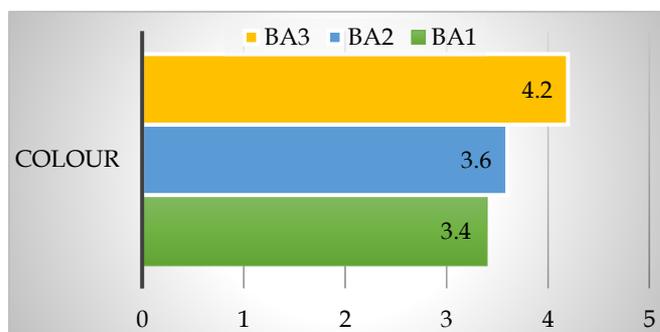


Figure 6. Average consumer ratings on the color of fried rice with asam sunti instant seasoning

Consumer Acceptance of the Aroma of Fried Rice with Asam Sunti Instant Seasoning

The results of the consumer acceptability test on the aroma of fried rice with asam sunti instant seasoning are presented in Table 4.

Table 4. One-Way ANOVA of Consumer Acceptance Level on the Aroma of Fried Rice with Asam Sunti Instant Seasoning

| Source of Variation | Degrees of Freedom | Sum of Squares | Mean Square | t-count | t-table |
|---------------------|--------------------|----------------|-------------|---------|---------|
| Treatment | 2 | 25.1 | 12.55 | 40.5* | 1.70 |
| Error | 87 | 27.2 | 0.31 | | |
| Total | 89 | 52.3 | 12.86 | | |

Note: *Significantly different (Primary Data, 2025)

Based on the ANOVA test results presented in Table 4, to determine the level of difference in consumer acceptance of the texture of fried rice with asam sunti instant seasoning, we refer to the values $t_{count} = 56.5$ and $t_{table} = 1.70$ since $t_{count} > t_{table}$ it indicates that there is a significant difference in texture due to the addition of *asam sunti*. The average consumer panelist acceptance of the texture can be seen in Table 5.

Table 5. Average Consumer Panelist Acceptance of the Texture of Fried Rice with Asam Sunti Instant Seasoning

| Treatment | Level of Significance |
|---------------------|-----------------------|
| 231 | 4.073a |
| 127 | 4.207a |
| 32 | 4.51b |
| LSD _{0.05} | 0.323 |

Source: Primary Data (2025)

Based on LSD_{0.05} test in Table 7 it can be explained that there are differences in texture between the fried rice with asam sunti instant seasoning at 10%, 20%, and 30% concentrations, as shown in Figure 7.

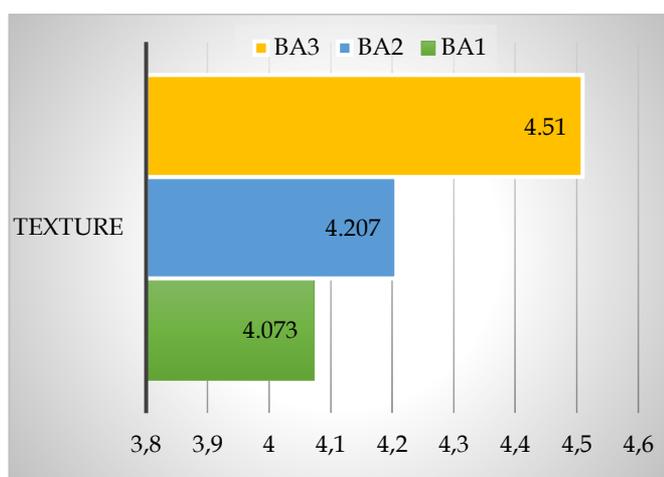


Figure 7. Average expert panel ratings on the texture of fried rice with asam sunti instant seasoning

Consumer Acceptance of the Taste of Fried Rice with Asam Sunti Instant Seasoning

The results of the consumer acceptability test on fried rice with asam sunti instant seasoning are presented in Table 6.

Table 6. One-Way ANOVA of Consumer Acceptance Level on the Taste of Fried Rice with Asam Sunti Instant Seasoning

| Source of Variation | Degrees of Freedom | Sum of Squares | Mean Square | t-count | t-table |
|---------------------|--------------------|----------------|-------------|---------|---------|
| Treatment | 2 | 51.2 | 25.6 | 121.9* | 1.70 |
| Error | 87 | 18.5 | 0.21 | | |
| Total | 89 | 69.4 | 25.8 | | |

Note: *Significantly different (Primary Data, 2025)

Based on the ANOVA test results presented in Table 6, to determine the level of difference in consumer acceptance of the taste of fried rice with asam sunti instant seasoning, we refer to the values $t_{count} = 121.9$ dan $t_{table} = 1.70$. Since $t_{count} > t_{table}$ this indicates that the addition of *asam sunti* has a significant effect on the taste of the instant fried rice. The average consumer panelist acceptance of the taste can be seen in Table 7.

Table 7. Average Consumer Panelist Acceptance of the Taste of Fried Rice with Asam Sunti Instant Seasoning

| Treatment | Level of Significance |
|---------------------|-----------------------|
| 231 | 4.023a |
| 127 | 4.323a |
| 32 | 4.453b |
| LSD _{0.05} | 0.374 |

Source: Primary Data (2025)

Based on the LSD_{0.05} test in Table 9, it can be explained that there are differences in the taste of fried rice with asam sunti instant seasoning at 10%, 20%, and 30% concentrations, as shown in Figure 8.

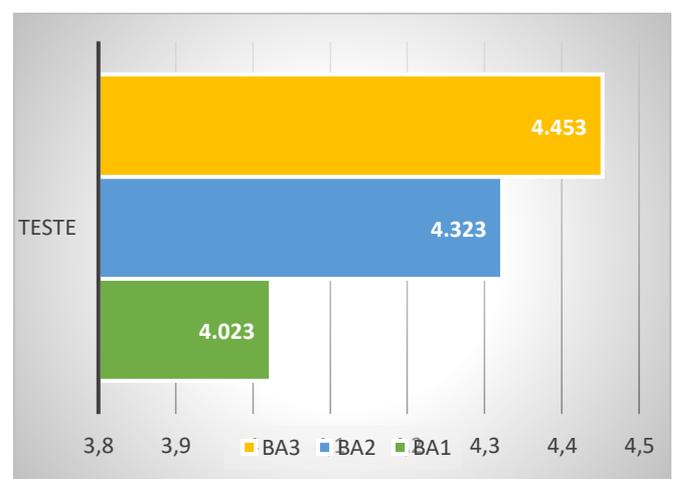


Figure 8. Average expert panel ratings on the taste of fried rice with asam sunti instant seasoning

The average ratings given by consumers on the organoleptic characteristics (color, aroma, texture, and taste) of fried rice with asam sunti instant seasoning can be seen in Figure 9.

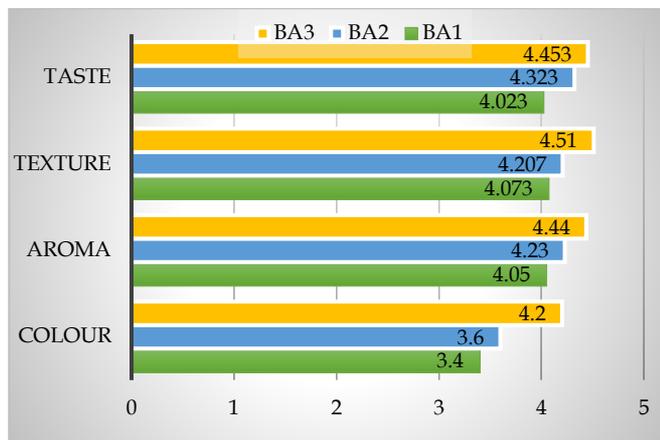


Figure 9. Overall average consumer ratings on fried rice with asam sunti instant seasoning

The results of consumer acceptance of the fried rice product with asam sunti instant seasoning, as shown in Figure 13, based on the evaluation of color, aroma, texture, and taste, indicate that the highest ratings were given to the treatment with 70 grams of asam sunti (BA3), with average scores of: color 4.2, aroma 4.44, texture 4.51, and taste 4.453.

Discussion

Organoleptic Characteristics of Fried Rice with Asam Sunti Instant Seasoning

The results of the observation test on the organoleptic characteristics of fried rice with asam sunti instant seasoning showed that the third treatment (BA3) received the highest scores from the expert panelists in terms of color, aroma, texture, and taste, compared to the second (BA2) and first (BA1) treatments. The BA3 fried rice had a more attractive mocha brown color, a stronger spice aroma, a dry texture, and a savory taste.

Color is one of the most important sensory attributes because it acts as a visual appeal, a distinguishing feature, and an indicator of product quality. It is the first impression consumers notice, making it a critical factor in attracting attention (Rahma et al., 2022; Sari et al., 2025; Mawaddah et al., 2024; Tisa et al., 2022; Marhani et al., 2021). The color observed in this study was mocha brown, a dark brown shade with a slightly yellowish tint, resembling concentrated milk coffee. This color resulted from the combination of asam sunti, onions, oyster sauce, fish sauce, and the cooking process, which deepened the color closer to mocha.

Aroma plays a vital role as it strongly influences appetite and creates an emotional connection with food. Aroma is caused by the formation of volatile

compounds, often triggered by enzymatic reactions (Arziyah et al., 2022). The aroma observed in this study was a rich blend of spices and the characteristic sourness of asam sunti. This distinct fragrance came from pepper, asam sunti, and various onion types, providing a traditional and appetizing character to the dish. Spiced aroma enhances the sensory appeal, making the fried rice flavorful, appetizing, and nutritionally rich (Perayuda et al., 2023).

Texture significantly affects whether a food product is acceptable or not. It refers to the pressure sensations perceived in the mouth when biting, chewing, swallowing, or through touch (Putri & Yusra, 2024). The texture in this study was described as dry, with rice grains separated – typical of well-cooked fried rice. This dryness provided a light yet savory eating experience.

Taste is perceived through the sense of taste and oral stimulation. Texture and consistency also influence the overall flavor and play a crucial role in food quality (Arziyah et al., 2022). The taste produced in this study was savory, emerging from the seasoning blend with the addition of asam sunti. This umami flavor comes from the balance of spices used in the seasoning and ensures that the dish doesn't only taste sour but offers a richer, more distinctive eating experience.

Standard Recipe for Instant Fried Rice Seasoning with Asam Sunti Addition

The results of the study showed that the standard recipe for instant fried rice seasoning with the addition of *asam sunti*, as chosen by the expert panelists, was the third treatment (BA3) with 30% *asam sunti* (70 g). Therefore, the standard recipe includes 70 grams of asam sunti, which received the highest evaluation score in this study.

Similarly, the consumer panel also selected the third treatment (BA3), with 30% *asam sunti* (70 g), as their preferred formulation. The findings confirmed that both expert panelists and consumer panelists favored the BA3 formulation.

The standard recipe for asam sunti instant fried rice seasoning includes 75 grams of garlic, 60 grams of shallots, 70 grams of asam sunti, 35 grams of onion, 15 grams of dried shrimp (ebi), 5 grams of salt, 5 grams of sugar, and 5 grams of ground pepper. Additionally, it uses 200 grams of cooking oil, 20 grams of margarine, 35 grams of oyster sauce, 15 grams of soy sauce, 10 grams of sesame oil, and 30 grams of fish sauce.

Consumer Acceptability of Fried Rice with Asam Sunti Instant Seasoning

Based on the results of the acceptability test of the organoleptic characteristics of instant fried rice with asam sunti conducted by consumers, it was found that the third treatment (BA3) received the highest scores in

terms of color, aroma, texture, and taste compared to the first (BA1) and second (BA2) treatments. The fried rice with asam sunti instant seasoning in the third treatment (BA3) was characterized by its mocha brown color, stronger spice aroma, dry texture, and savory taste.

The findings of this study show that both the expert panelists and consumer panelists gave similar evaluations. Both groups preferred the third treatment (BA3), as evidenced by the highest scores obtained in the tests. This preference is likely due to the fact that fried rice is a typical Indonesian dish that is easy to prepare and widely available. Fried rice is considered a unique food because it can be enjoyed at any time—morning, afternoon, evening, or even late at night—whether served hot or cold. Additionally, fried rice is highly versatile and can be combined with a wide variety of ingredients. Its simple and practical cooking method allows for additional spices and seasonings to be added to enhance flavor and variety (Santoso et al., 2019; Kurniadi et al., 2019). For these reasons, fried rice is a favorite across all age groups, including children, teenagers, adults, and the elderly.

Hypothesis Testing

There is an effect of the addition of asam sunti on the organoleptic characteristics (color, aroma, texture, and taste).

There is an effect of the addition of asam sunti on consumer acceptance of fried rice with asam sunti instant seasoning.

Based on the results of the ANOVA analysis, the value of $t_{\text{count}} > t_{\text{table}}$, which indicates a significant effect of the *asam sunti* instant fried rice seasoning on organoleptic characteristics (color, aroma, texture, and taste). This finding is supported by the fact that the *asam sunti* instant fried rice with 30% *asam sunti* addition (BA3) was well accepted by both expert panelists and consumers. Therefore, the hypothesis of this study is accepted, as the addition of *asam sunti* significantly influences both the organoleptic characteristics and consumer acceptance of the fried rice. Both expert panelists and consumers favored the third treatment (BA3) due to its mocha brown color, rich spiced aroma, savory taste, and dry texture.

Conclusion

The third treatment (BA3) produced instant fried rice seasoning with the highest organoleptic scores in terms of color, aroma, texture, and taste compared to BA1 and BA2, due to its appealing mocha brown color, strong spiced aroma, dry texture, and savory flavor. The standard recipe for BA3 instant fried rice seasoning consists of a mixture of key ingredients such as garlic, shallots, *asam sunti*, onions, dried shrimp (*ebi*), along

with specific amounts of seasonings and oils to create a distinctive flavor. BA3 was favored by both expert panelists and consumer panelists, receiving the highest scores in all organoleptic aspects due to its attractive color, strong spiced aroma, dry texture, and savory taste.

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Author Contributions

Conceptualization, methodology, formal analysis, investigation, resources, data curation, and original draftwriting: L.S.; validation, review and editing, and visualization: T.N., Z.M., Y.H.H. and I. All authors have read and approved the published version of the manuscript.

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Conflicts of Interest

All author declares that there is no conflict of interest.

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