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Organoleptic Quality Evaluation of Peranakan Etawa Goat Milk Yoghurt (Capra Aegagrus Hircus) with the Addition of Mango Golek (Mangifera indica)

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ABSTRACT

Yoghurt is a drink made from raw milk which has been fermented using a starter which has a slightly thick texture with a slightly sour taste. The purpose of this study was to determine the effect of golek mango juice on the color of yogurt, the texture of yogurt, the taste of yogurt and the aroma of yogurt in the Etawa crossbreed goat's milk by conducting an assessment in organoleptic testing of panelists. This research was conducted at the Laboratory of the Faculty of Agriculture and Animal Husbandry, University of Tjut Nyak Dhien Medan from May to June 2023. The study was conducted using the Kruskall Wallis method with 4 treatments, namely P0 (without golek mango juice), P1 (150 ml/4 g of golek mango juice), P2 (200 ml/6 g of golek mango juice), and P3 (250 ml/8 g of golek mango juice) with organoleptic tests consisting of color, texture, taste and aroma. The results showed that the addition of mango juice did not significantly affect the color, texture, taste and aroma of yogurt, however 8 g of mango juice in yoghurt showed the best preference. In conclusion addition of 8 g of golek mango juice is preferred by panelists.

Keyword: Aroma, Color, Etawa Peranakan, Goat, Milk Yoghurt, Golek Mango Juice, Taste, Texture

1. Introduction

Yogurt, a long-consumed dairy product, offers a wide range of health benefits. Over time, yogurt undergoes continuous modifications aimed at improving its nutritional properties and overall effects. Yogurt has the ability to minimise blood cholesterol levels, help support gastrointestinal health, and potentially avoid digestive tract cancer. It contains live probiotic bacteria that provide benefits to the microflora in the digestive system [1].

Yogurt is a type of food obtained by fermentation of milk or reconstituted milk, using the bacteria Lactobacillus bulgaricus, Streptococcus thermophilus, or other suitable lactic acid bacteria. This process may involve the addition of additional food ingredients and approved food additives, as outlined by the National Standards Agency in 2009 [2]. The quality of yogurt is influenced by various aspects, including the quality of the milk used, the length of storage, the temperature during incubation, and the type of starter culture used in the manufacturing process.

Yogurt consumption allows individuals with lactose intolerance to enjoy dairy products. Yogurt is derived from fermented milk as described by [3], and its consistency is similar to porridge or ice cream. Typically, yogurt consists of milk fat of at least 3.25% and non-fat solids of 8.25%. Yogurt variants can be produced with a low fat content, ranging from 0.5% to 2%, or as a non-fat option with a milk fat content of less than 0.5%. Yogurt can be made using various types of milk, including goat's milk, as suggested by Stelios and Emmanuel in 2004 [4]. Converting goat's milk into yogurt can increase market value, nutritional content, and appeal to consumers who prefer goat's milk products. The introduction of microbial starter inoculation helps to degrade the fatty acids responsible for the characteristic odour of goat's milk.

The addition of mango golek fruit juice also possibly can help minimise or eliminate the overall odour of goat's milk. This is because mangogolek contains chemical compounds that play a role in creating a pleasant aroma in drinks. This study assessing the texture, aroma, colour and taste quality of goat's milk yoghurt with the addition of golek mango juice in order to understand the impact of golek mango juice

bioactive compounds on the characteristic 'prengus' odour of goat's milk. This evaluation will involve organoleptic tests to determine changes in colour, texture, aroma and taste.

2. Method.

The research was conducted in the laboratory of the Faculty of Agriculture and Animal Husbandry, Tjut Nyak Dhien University Medan from May to June 2023. Organoleptic Testing of Yoghurt Colour, Taste, Aroma and Texture.

2.1 Tools and Materials

The materials were: etawa goat milk, golek mango juice, biocule stater, sugar, clean water, paper for labels, stationery, plastic wrap, tissue, cloth, sunlight laundry soap, alcohol, hekter, umbrella paper. The tools used were: scales, glass jar, erlen mayer, autoclave, incubator, thermometer, glass jar bottle, fermentation container.

2.2 Study Design Model

This research is an experimental study using the Kruskal-Walis Method. The treatment used was testing 4 concentrations with mango juice. P0 (Goat Milk Yoghurt without Golek Mango juice), P1 (Goat Milk Yoghurt 150 ml/4 grams of Golek Mango juice), P2 (Goat Milk Yoghurt 200 ml/6 grams of Golek Mango juice) and P3 (Goat Milk Yoghurt 250ml/8 grams of Golek Mango juice). After that, the Organoleptic test was conducted from texture, aroma, taste and colour.

2.3 Data Analysis

The data obtained is primary information obtained from organoleptic evaluation conducted on goat's milk yoghurt supplemented with golek mango juice. The data is also primary information obtained through organoleptic assessment conducted on goat's milk yoghurt supplemented with golek mango juice. Organoleptic assessment was conducted by a panel of raters who gave subjective and spontaneous judgements based on a hedonic scale provided by the researcher. After the organoleptic test, statistical analysis was carried out using SPSS software.Marketing institutions were analyzed to find out the institutions involved in the goat and sheep marketing system in the Bireuen market in Aceh. This analysis will yield information on product flows, which can establish marketing channels from the farmer level to the final consumer level. These marketing institutions generally perform exchange functions, physical functions, and facility functions.

2.4 Yoghurt Preparation

700 grams of defect-free golek mango fruit was washed and cut, followed by blanching at 65°C for 2.5 minutes. Next, the mango fruit was mashed using a blender with the addition of 600 ml of water, then 600 ml of the resulting extract was separated. Finally, 200 ml of sugar solution was added to the extract. The mixture was transferred into a sterile container, and the opening of the container was covered with a clean cloth. The mango juice underwent fermentation for 2 days.

Next, two litres of whole milk was stirred gently and heated to 80°C for a period of 15 minutes. After that, the starter was added and the mixture was incubated at 43°C for 3 hours. Next, mango juice was added according to the treatment group: without mango juice (M0); 4gram (M1); 6gram (M2); 8gram (M3), and the mixture was incubated again at 43°C for 2 hours. The resulting yoghurt was then cooled to room temperature and stored in a refrigerator until ready for use.

3. Discussion

3.1. Colour of peranakan etawa (PE) goat milk yoghurt with mango juice

Table 1. Kruskal-Wallis H analysis of the colour of peranakan etawa (PE) goat milk yoghurt with mango juice

	Colour
Kruskal - Wallis H	34.909
Df	3
Asymp.Sig.	0.21

Table 1 shows that the results of the Kruskal Wallis test of the addition of mango juice to the aroma of etawa goat milk yoghurt (PE) has no significant effect where the significant value is greater than 0.05 (P>0.05). This is because the mango juice added to the yoghurt milk of peranakan etawa (PE) goat milk gives an unfavourable effect on the colour of the yoghurt which is less attractive to the panelists. Colour is a crucial factor in determining the quality and

acceptability of food products among panelists. It often receives significant attention because it shows the initial impression of whether a food product will be well received or not later. Colour is often associated as one of the identifiers and attractions of a product therefore, colour has a major position in organoleptic parameters [5].

3.2 Texture of peranakan etawa (PE) goat milk yoghurt with mango juice

The results of organoleptic testing of the texture score of peranakan etawa (PE) goat milk yoghurt with the addition of mango juice are presented in Table 2.

Table 2. Kruskal-Wallis H analysis of the texture of peranakan etawa (PE) goat milk yoghurt with mango juice.

	Texture
Kruskal - Wallis H	21.062
Df	3
Asymp.Sig.	0.201

Table 2 shows that the results of the Kruskal Wallis test for the addition of mango juice to the texture of peranakan etawa (PE) goat milk yoghurt has no significant effect where the significant value is smaller than 0.05 (P>0.05). According to the panellists, the texture of mango yoghurt is thinner due to the liquid ingredients used in its preparation, such as mango juice. [6] explained that the texture of yogurt arises from the clumping of casein in milk to form a gel-like structure due to bacterial activity. After the gel formation process, subsequent changes in texture occur, at the same time as flavour development. The addition of various ingredients affects the texture of yogurt. According to [7], the texture of yogurt becomes thinner as the liquid content of the ingredients used in its preparation increases. Texture is a significant quality criterion for fermented goat milk yogurt products. According to [8], the texture of yogurt can be categorised into three types: thick, slightly thick, and liquid.

[9] confirmed that the texture of fermented milk produced can be influenced by the type of substrate or raw material used. This phenomenon is believed to come from variations in the type and configuration of proteins found in golek mango fruit and milk, which can affect the destabilisation of protein molecules caused by lactic acid.

3.3. Taste of peranakan etawa (PE) goat milk yoghurt with mango juice

The results of organoleptic testing on the taste score of peranakan etawa (PE) goat milk yoghurt with the addition of mango juice are presented in Table 3.

Table 3. Kruskal-Wallis H analysis of the taste of peranakan etawa (PE) goat milk yoghurt with mango juice.

	Rasa
Kruskal - Wallis H	1.136
Df	3
Asymp.Sig.	0.768

Table 3 shows that the results of the Kruskal Wallis test of the addition of mango juice to the taste of etawa goat milk yoghurt (PE) has no significant effect where the significant value is smaller than 0.05 (P>0.05). [10] describe flavour as a stimulus felt by the taste buds on the tongue, which is then interpreted by the brain as a sensation, thus causing a certain response to the stimuli that have been given. For a compound to contribute flavour, it must first be able to dissolve in water.

The factor that strongly influences the taste of yoghurt is the imperfection in the fermentation process in making yoghurt where the taste is very dependent on the fermentation results of making yoghurt and [11], said the same thing that the results of fermentation produced by lactic acid bacteria can make the taste of milk become sour, in addition to the addition of less mango juice also resulted in the taste of yoghurt not significantly affecting the taste of yoghurt of goat's milk peranakan etawa (PE).

3.4 Aroma of peranakan etawa (PE) goat milk yoghurt with mango juice

Table 4. Kruskal-Wallis H analysis of aroma of peranakan etawa (PE) goat milk yoghurt with mango juice.

	Aroma
Kruskal - Wallis H	21.362
Df	3
Asymp.Sig.	0.43

Table 4 shows that the results of the Kruskal Wallis test of the addition of mango juice on the aroma of goat milk yoghurt peranakan etawa (PE) does not give a real effect where the significant value is smaller than 0.05 (P>0.05). This is because the dominant panelists did not like the aroma of etawa goat milk yoghurt (PE), however more panelists liked the aroma of etewa goat milk yoghurt (PE) in the addition of 8 grams of mango juice.

In the aroma of yoghurt, the fermentation process will affect and help eliminate the fishy aroma of goat's milk, which is very influential on the panelists not liking the suspicion that there is still a distinctive aroma of goat's milk [12]. In addition, what influences is the lack of concentration of mango juice because mango fruit actually has a fairly distinctive aroma that makes panellists like the aroma of yoghurt added with mango juice where according to [13], mango fruit contains protein, fat, various acids, vitamins, minerals, tannins, pigments, and volatile compounds, these volatile substances give a distinctive aroma to mango fruit.

4. Conclusion

The addition of golek mango juice had the same effect on colour, texture, taste and aroma of goat milk yoghurt.

Suggestion

This study can be continued with the addition of mango juice concentration for organoleptic testing.

References

[1] Joon, R., Mishra, S. K., Brar, G. S., Singh, P. K., & Panwar, H. (2017). Instrumental texture and syneresis analysis of yoghurt prepared from goat and cow milk. *The Pharma Innovation*, *6*(7, Part G), 971.

[2] Indonesian National Standard. 2009. SNI 2981

[3] Legowo, A. M., Kusrahayu dan Mulyani.S (2009). Ilmu dan Teknologi Pengolahan Susu. Universitas Diponegoro, Semarang.

[4] Stelios, K., & Emmanuel, A. (2004). Characteristics of set type yoghurt made from caprine or ovine milk and mixtures of the two. *International journal of food science & technology*, *39*(3), 319-324.

[5] Ivani, T. P. (2017). Studi Komparasi Atribut Sensoris dan Kesadaran Merek Produk Pangan. Jurnal Pangan dan Agroindustri, 5(2), 66-73.

[6] Febrianti, P., Mutmainah, A., Yeriska, F., dan Advinda, L. (2022). Uji Organoleptik Yoghurt yang Ditambahkan Ekstrak Mangga (*Mangifera indica* L.). In *Prosiding Seminar Nasional Biologi* (Vol. 2, No. 2, pp. 797-803).

[7] Dipu, Y, Hastuti, U, dan Gofur, A. (2016). Pengaruh Macam Gula Terhadap Kualitas Yoghurt Kacang Buncis (*Phaseolus vulgaris*) varietasJimas Berdasarkan Hasil Uji Organoleptik, proceeding Biology Education Conference,Vol. 13, No. 1, hal 857-862

[8] Yulneriswarni, dan L. Tuti. (2009). Fermentasi Keju dari Berbagai Jenis Kacang Menggunakan Isolat Bakteri Asam Laktat dari Nanas. Fakultas Biologi Universitas Nasional Jakarta.

[9] Maya Ayuni, Sri Rahmadani Fitri, Dwi Hilda Putri, Resti Fevria, Linda Advinda. (2021). Pembuatan Yoghurt Menggunakan Yakult Sebagai Starter. Prosiding SEMNAS BIO 2021 Universitas Negeri Padang Volume 01 2021, hal 756-763. DOI: https://doi.org/10.24036/prosemnasbio/vol1/11.

[10] Harjiyanti, M. D., Y. B. Pramono, dan S. Mulyani. (2013). Total Asam, Viskositas, dan Kesukaan pada Yoghurt Drink dengan Sari Buah Mangga (Mangifera indica) sebagai Perisa Alami. Jurnal Aplikasi Teknologi Pangan, 2(2):104107.

[11] Effendy, M. M. (2016). Uji Kualitas Produk Yoghurt Susu Kambing Peranakan Etawah (PE) di Malang Raya (Doctoral dissertation, University of Muhammadiyah Malang).

[12] Dewitara, S. (2021). Analisis Mutu Buah Mangga Golek (*Mangifera indica* L.) Pada Metode Penyimpanan Zero Energy Cool Chamber (Zecc) Dengan Kombinasi Pengemasan (Doctoral dissertation, Universitas Hasanuddin).