The Journal Gastronomy Tourism

Journal homepage:
https://ejournal.upi.edu/index.php/gastur/index

Exploration of The Nutritional Content of *Jamu Beras Kencur* Sorbet to Develop Indonesian Culinary Innovation

Nina Indra Kristiana, Ni Putu Eka Trisdayanti*

Bali Tourism Polytechnic, Indonesia

*Correspondence: E-mail: ninaindra@ppb.ac.id

ABSTRACT

Culinary innovation is one of the important efforts in preserving Indonesian culinary culture. *Jamu beras kencur,* a traditional Indonesian drink, is starting to be less in demand, especially by the younger generation. In contrast, frozen food products such as sorbets offer great flexibility and appeal, especially with a wide range of innovative flavors. However, traditional sorbet tends to be limited to fruits. Therefore developing a sorbet derived from *jamu beras kencur* offers an opportunity to introduce new taste experiences while enhancing nutritional value and preserving cultural identity. This study aims to evaluate the quality of *jamu beras kencur* made from sorbet, including the quality of taste, texture, aroma, and color, as well as its macro nutritional value. This study uses a mixed method. The study involved 25 untrained panelists. Data were collected through observation, documentation, experimental, organoleptic, and nutritional content tests. The experimental test results showed that the *jamu beras kencur* sorbet received a score of 77.6% for texture. The sorbet received a score of 80% for taste. The average organoleptic score across all attributes was 78.4%, categorized as "good." Nutritional analysis per 100 grams revealed that the sorbet contains 15.90 g of carbohydrates, 1.24 g of protein, and 0.30 g of fat.

ARTICLE INFO

Article History:
Submitted/Received Maret 2025
First Revised May 2025
Accepted May 2025
First Available online June 2025
Publication Date June 2025

Keyword:
Nutritional Content; Jamu Beras Kencur; Sorbet; Culinary Innovation; Traditional Drink.

1. INTRODUCTION

In the face of increasingly competitive business environments, product innovation has become a crucial element in determining the success of a business and entrepreneurship (Ningsih, C., et al, 2024; Winesti. C, et al, 2019; Ningsih C & Sudono A, 2016). One sector that is currently experiencing intense competition is the culinary industry, as food and beverages are basic human needs that continue to evolve with changing times and consumer trends. As awareness of healthy lifestyles grows, society is also seeking products that not only satisfy their taste preference but also provide health benefits. Therefore, developing innovative, unique, and different culinary products is essential to increase sales potential and attract consumers in this highly competitive market (Ningsih C, et.al., 2023).

Indonesia, as an agrarian country with abundant natural resources, offers a wide range of raw materials that can be processed into interesting and valuable culinary products. One of Indonesia's cultural culinary treasures is jamu, a traditional herbal drink made from various natural spices, known for its significant health benefits. Jamu has been used for centuries by the Indonesian people as a traditional remedy to improve health, boost stamina, and treat various ailments. However, despite its long history, the popularity of jamu has declined, especially among young people. This is primarily due to the strong, distinctive flavor and aroma of the spices used in jamu, which is often less favored by younger generations and children.

Given this situation, there is a need for innovation in the way jamu is consumed, to make it more appealing to the younger generation and to introduce its health benefits in a more enjoyable and acceptable way. One food product that has widespread appeal is sorbet, a frozen dessert made from fresh fruits, water, and sugar, offering a sweet and refreshing taste without the addition of fat. Sorbet is already well-known as a delicious dessert that is nutritious and easily loved by various age groups, from children to adults. What makes sorbet unique is its versatile presentation, smooth texture, and refreshing nature, especially in hot weather.

Despite its popularity, most commercially available sorbets still rely on common fruit-based flavors, with limited innovation involving traditional Indonesian spices as core ingredients. One such spice, which presents an interesting opportunity for sorbet innovation, is *jamu beras kencur*, a herbal drink made from rice, kencur *Kaempferia galanga*), and other spices. *Jamu beras kencur* offers numerous health benefits, such as boosting stamina, relieving headaches, and improving digestion. However, the strong and distinctive taste of jamu often acts as a barrier to broader acceptance, especially among younger consumers.

This presents an innovative idea to combine two seemingly unrelated domains: *jamu* and sorbet. By turning *jamu beras kencur* into sorbet, the product could offer a new way of experiencing *jamu* in a more appealing, delicious, and refreshing form. Sorbet made from *jamu beras kencur* can provide a sweet, pleasant taste, a smooth texture, and, of course, the health benefits derived from the natural ingredients used in making *jamu*. This approach not only changes the way society perceives *jamu* but also offers an alternative way for consumers to enjoy the benefits of *jamu* without *its* bitterness and strong aroma.

Additionally, the development of *jamu beras kencur* sorbet can help address the issue of low interest in *jamu* among children and teenagers. By presenting *jamu* in a more attractive and accessible form, it is hoped that younger generations can become familiar with and begin incorporating *jamu* into their healthy lifestyle choices. This product also has the potential to reintroduce *jamu* to the broader Indonesian population in a more creative and relevant way, aligned with modern consumer preferences.

DOI: https://doi.org/10.17509/gastur.v12i1.81104
p- ISSN 2776-608X e- ISSN 2776-5970

However, to ensure that *jamu beras kencur* sorbet gains market acceptance, further research is necessary to evaluate the organoleptic qualities and nutritional content of the product. Organoleptic testing will provide insights into the taste, aroma, color, and texture of the *jamu beras kencur* sorbet, while nutritional analysis will provide important information regarding how well the sorbet meets the body's nutritional needs. Such research will also serve as valuable information for consumers in choosing products that are not only tasty but also nutritious and beneficial for their health.

Therefore, this research aims to test the potential of *jamu beras kencur* sorbet as an innovative culinary product that not only reintroduces the benefits of jamu to the public but also offers a healthy and refreshing dessert option. By combining natural, health-rich ingredients with an attractive and delicious presentation, *jamu beras kencur* sorbet is expected to appeal to the broader public, especially younger consumers, and emerge as a modern addition to Indonesia's rich culinary heritage.

2. LITERATURE REVIEW

Culinary innovation is creating something new or different in food and beverage. Culinary innovation is inseparable from the role of culinary experts. Culinary experts are dedicated to developing food recipes that are not only delicious but also nutritious and easy to obtain (Wood et al., 2023). Indonesian culinary development is an effort to improve and preserve the culinary traditions in Indonesia. This culinary development is not only carried out in Indonesia but also abroad. Many offer Indonesian cuisine at pocket-friendly prices, whether it is a simple food stall or a home-based catering service abroad (Yayusman et al., 2023). Several types of herbal medicine that exist in Indonesia and are known in several regions include *jamu beras kencur*, *jamu kunyit asam*, and *jamu temulawak* (Haliza et al., 2024; Wahyuningsih ES et al., 2022; Adhawati & Jatmiko, 2023). *Jamu beras kencur* is a traditional Indonesian drink made from rice, *kencur*, and several other additives. This herb is a traditional Javanese herb that uses *Kaempferia galanga* (Yayusman et al., 2023). *Jamu beras kencur* is often drunk to improve fitness and relieve fatigue. However, scientific research on *jamu beras kencur* remains limited (Tupenalay et al., 2024).

Frozen food refers to food products that are preserved by reducing their temperature below the freezing point, which leads to the formation of ice crystals within the food matrix. This freezing method is widely applied in the food industry at both small and large scales to extend the shelf life of food products while maintaining their safety and quality (James et al., 2015; Sen et al., 2021; James et al., 2007). Frozen dessert is a type of processed frozen food with a sweet taste. As the name implies, frozen dessert is enjoyed cold. Frozen dessert has several compositions that can be adjusted according to needs and has a variety of processing techniques (Craig & Brothers, 2022; Sipple et al., 2022). Sorbet is a frozen dessert or frozen food made from fruits, water, and sugar. Unlike ice cream, sorbet is a frozen food that does not contain milk or cream, producing a smooth and soft texture (Hong & Nip, 1990). The nutritional content in traditional drinks is all the substances contained in drinks that are good for the body. The nutritional content of food has become the primary concern of consumers. They place a strong emphasis on nutritional content in order to meet the body's nutritional needs (Martin, 1973). The term *sorbet* is derived from the Italian word meaning "water ice." Sorbet is a frozen dessert with a smooth texture made from fruit juice or fruit puree, without any fat, eggs, gelatin, or dairy products (Brown, 2011). Sorbet is a frozen dessert composed of fresh fruit juice, water, sugar, and stabilizers, with optional additions of colorants and acids (Marth & James, 2001).

DOI: https://doi.org/10.17509/gastur.v12i1.81104
p- ISSN 2774-6186 e- ISSN 2716-3970

Sorbet, due to its lack of fat content and high water content, is prone to the formation of large ice crystals during the freezing process. This can result in an undesirable texture that feels rough or gritty when eaten. Large ice crystals may also affect the sorbet's ability to hold its form and melt in an unappealing manner. To prevent this, the use of stabilizers is essential in sorbet production. Stabilizers are ingredients that help control the formation of ice crystals, ensuring that they remain small and uniform, which in turn helps to create a smooth and creamy texture. The primary role of stabilizers in sorbet is to prevent the crystallization of large ice particles. By doing so, they improve the mouthfeel and overall sensory experience of consuming the sorbet. Additionally, stabilizers also contribute to the sorbet's resistance to melting. They help to maintain its structure for a longer time, preventing it from becoming overly watery or losing its form too quickly once removed from the freezer. Furthermore, while stabilizers do not alter the freezing point of the sorbet, they may influence the expansion of the mixture during freezing, thus limiting the overall volume of the final product. Because stabilizers improve the texture and quality of sorbet while also enhancing its resistance to melting, they are key to ensuring a high-quality end product. This makes sorbet an appealing option for manufacturers, as it can be produced more consistently with a desirable texture. Moreover, the use of stabilizers presents an opportunity to position sorbet as an affordable yet functional food product. The ability to create a product with good taste, smooth texture, and resilience to melting makes it more marketable, with the potential to be widely accepted by consumers. This could allow sorbet to become a popular choice as a healthy, functional dessert that combines affordability with high-quality taste and texture (Silalahi et al., 2014).

Lack of creativity and lack of knowledge can be an obstacle to culinary innovation. If a culinary expert does not have this, it will not be easy to protect the results of creativity and knowledge poured into the development of culinary innovations (Presenza et al., 2017). Unfortunately, the lack of interest of the younger generation and increasingly fierce foreign culinary competition hinder these conservation efforts. According to the younger generation, consuming international food rather than local and traditional food due to the influence of food trends and social media can be challenging. Culinary experts must overcome this challenge in developing culinary innovations (Cifelli et al., 2020). *Jamu Beras Kencur* is often not in demand, especially by the younger generation, one of which is because the way it is consumed is still by drinking it directly. The younger generation prefers food and beverage products that are easy to consume and flexible to carry around because of their usually busy schedules. If it is not as desired, it could be that these food and beverage products have decreased in demand (Nsibanyoni et al., 2023). Sorbet is still not in demand because of the flavor innovation, usually only made from fruits, making it dull and less prestigious than ice cream.

Meanwhile, ice cream has more choices of flavors served and various combinations, so it is more interesting to enjoy and has a broad market share (Sipple et al., 2022). Not all traditional drinks have good nutritional content for the body because they are rich in sugar or contain unhealthy additives. Some traditional drinks contain addictive substances and preservatives such as artificial sweeteners, dyes, and additional flavorings that are not good for health (Kasapoğlu et al., 2019). The nutritional content contained in traditional drinks can be varied. Nutritional content depends on the composition and method used in processing. Instability in the use of composition and methods will make the drink's nutritional value uncertain or change its value (Gernet M. V et al., 2019). Since sorbet is made from natural ingredients without the addition of cream or milk, it retains a natural sweetness, so there is no need to add too much sweetener during its preparation. Sorbet made from fruits contains no saturated fats at all, compared to ice cream, which contains more fat in each serving. Sorbet

DOI: https://doi.org/10.17509/gastur.v12i1.81104
p- ISSN 2776-608X e- ISSN 2776-5970

and frozen yogurt desserts are indeed safer to consume for those who are avoiding fatty foods. In addition, sorbet also contains various important vitamins and minerals that are beneficial for the body (Shaik et al., 2023).

This research is significant as it contributes to the preservation of Indonesian culinary heritage, supports public health improvement, facilitates the development of innovative food products, and enriches scientific knowledge. Culinary culture is an intangible cultural heritage in which traditions, rituals, and practices are carried out from generation to generation. This culinary culture will make the sense of identity and continuity in the community even more solid (Celi & Moore, 2016). Cooking methods also influence improving public health; things that can be done, for example, using clean cooking methods to provide health benefits and reduce harmful bacteria during the traditional cooking process (Rosenthal et al., 2017). In developing new products, it is necessary to incorporate consumer knowledge in all new product development processes, especially in the food sector, which can determine the final product produced according to consumer desires to increase the acceptance and success of the products made (Rosenthal et al., 2017; Grunert et al., 2011)**.**

. Improvements in education are inseparable from research that can significantly impact the field being researched (Gilmor et al., 2023). Researchers are obliged to disseminate the results of their research to the broader community (Landabaso, 1997; Lafont, 2009). In general, traditional herbal medicine (jamu) is widely regarded as a health-promoting beverage. *Jamu* is traditionally consumed by Indonesians to maintain health, improve physical fitness, enhance beauty, and prevent illness. The ingredients of *jamu* are plant-based and sourced directly from nature, making them easily accessible and free from synthetic chemicals, thus having relatively fewer side effects. Some types of *jamu* commonly sold by herbal medicine vendors include *sinom*, *kunyit asam*, and *beras kencur***,** among others (Yuliarti, 2008).

Testing through experimental, organoleptic, and nutrition tests is one way to make *jamu beras kencur* sorbet. Experimental tests were conducted produce a consistent sorbet. The organoleptic test was carried out to assess sensory properties such as taste, aroma, texture, and appearance in *jamu beras kencur* sorbet by panellists. The nutrition test was conducted to analyze the nutritional content of *jamu beras kencur* sorbet products, such as carbohydrates, proteins, and fats. This study aims to discover and describe how the quality of *jamu beras kencur* made from sorbet includes the quality of taste, texture, aroma, and color. Determining and describing the macronutrient value contained in *jamu beras kencur*, including protein, carbohydrates, and fat, are also important.

3. METHODS

This study employs a mixed-method research design. Quantitative data were obtained from questionnaires with respondents and nutritional content test scores. Qualitative data were gathered by interpreting and elaborating on the quantitative findings. In this study, untrained panelists consisting of 25 people were selected because they were a group of people with average abilities who were not formally trained but could distinguish and communicate the reactions of the organoleptic test. This research was conducted with students of the Bali Tourism Polytechnic in Nusa Dua, Bali. In addition to using observation and documentation, this study includes experimental tests using standard recipes. Organoleptic test using a questionnaire. Nutritional content test in a nutrition research laboratory. The quantitative data obtained by questionnaire was analyzed using the Likert Scale.

DOI: https://doi.org/10.17509/gastur.v12i1.81104
p- ISSN 2774-6186 e- ISSN 2716-3970

4. RESULTS AND DISCUSSION

The results of the experimental test obtained the standard recipe as follows

Table 1. *Jamu Beras Kencur* Sorbet Recipe

Name		Processed *jamu beras kencur* into Sorbet	
Description		Sorbet with *jamu beras kencur* flavor	
Yield		500 Ml	
No	Ingredient	Unit	Quantity
1	*Jamu beras kencur*	mL	500

Source: personal documentation

Preparation Instructions:

a. Prepare the tools and materials required.
b. Pour the measured *jamu beras kencur* into the ice cream-making machine.
c. Stir until the mixture becomes thick yet smooth and scoopable.
d. Pour the sorbet mixture into a freezer-safe plastic container. Close the container and freeze for 2 to 4 hours.

In the process of making sorbet with *jamu beras kencur* as the main ingredient, appropriate equipment and utensils are required to follow the production procedure. This includes tools for measuring ingredients, mixing materials, and others, such as bowls, scales, spatulas, storage containers, and an ice cream maker.

The organoleptic evaluation of *Jamu Beras Kencur* Sorbet, conducted with 25 panelists from the Bali Tourism Polytechnic. The evaluation assessed the sorbet based on texture, aroma, flavor, and color. In terms of texture, 5 panelists rated it as "very good," 13 as "good," 6 as "fairly good," and 1 as "poor," indicating generally positive feedback. For aroma, 9 panelists gave a rating of "very good," 11 rated it "good," and 5 rated it "fairly good," suggesting that the scent of the sorbet was well-received. When it came to flavor, 10 panelists found it "very good," 6 rated it "good," 8 rated it "fairly good," and 1 rated it "poor," highlighting a generally favorable reception but with some varied opinions. As for color, 2 panelists rated it "very good," 13 rated it "good," 9 rated it "fairly good," and 1 rated it "poor," showing that the visual appeal was mostly positive with a few mixed reviews. The results indicate that *jamu beras kencur* sorbet was generally well-received in terms of texture, aroma, and flavor, although improvements in certain areas, such as color and flavor, may further enhance its appeal.

The results of the documentation test obtained with the Likert Scale showed that texture received a score of 77.6%. Flavor received 80%. Aroma received 83.2%. Color received 72.8%. The results of the nutritional content test in *jamu beras kencur* sorbet have carbohydrate, protein, and fat content.

Jamu beras kencur sorbet can be one of the culinary innovations of traditional Indonesian drinks. This product has the potential to appeal to the younger generation, especially since the test respondents were youth. *Jamu beras kencur* sorbet is one of the attractions for the younger generation to enjoy herbal medicine in a contemporary style. *Jamu beras kencur* sorbet is a fruit-based dessert made from traditional Indonesian herbal ingredients. It contains essential macronutrients that are beneficial for overall health.

DOI: https://doi.org/10.17509/gastur.v12i1.81104
p- ISSN 2776-608X e- ISSN 2776-5970

Figures 1. *Jamu Beras Kencur* Sorbet
Source: personal documentation

The laboratory analysis of carbohydrate, protein, and fat content in this study was conducted at the Analytical Laboratory of Udayana University, located at JL. Raya Kampus Udayana, Bukit Jimbaran, Kuta Selatan District. The results of the laboratory tests for carbohydrate, protein, and fat content are presented in Table 2.

Table 2. Nutritional Content of *Jamu Beras Kencur* Sorbet

No	Nutrient Content Tested	Method	Unit	Analysis Result
1	Carbohydrate Content	Spectrophotometry	%	15.90
2	Protein Content	Kjeldahl	%	1.24
3	Fat Content	Soxhlet Extraction	%	0.30

Source: personal documentation

According to the Regulation of the Indonesian Ministry of Health No. 28 2019, the average daily nutritional requirements for adults aged 19-29 years is 2,450 kcal. For adults in this age group, the daily nutritional requirements are 60% carbohydrates, 25% protein, and 15% fat from the total daily caloric intake of 2,450 kcal. The daily requirements can be calculated using the following formula:

Carbohydrates = 60% of total caloric requirement
= 60% x 2,450
= 1,470 kcal
= 1,470 ÷ 4 = 367.5 g

Protein = 25% of total caloric requirement
= 25% x 2,450
= 612.5 kcal
= 612.5 ÷ 4 = 153.12 g

Fat = 15% of total caloric requirement
= 15% x 2,450
= 367.5 kcal
= 367.5 ÷ 9 = 40.83 g

DOI: https://doi.org/10.17509/gastur.v12i1.81104
p- ISSN 2774-6186 e- ISSN 2716-3970

After determining the average daily nutritional requirements for adults aged 19-29 years is 2,450 kcal, this is converted into grams based on the following conversions: 1 gram of carbohydrates provides 4 kcal, 1 gram of protein provides 4 kcal, and 1 gram of fat provides 9 kcal. The calculations for converting the daily requirements of carbohydrates, protein, and fat yield the following daily requirements: 367.5 g of carbohydrates, 153.12 g of protein, and 40.83 g of fat.

After determining the calculation formula for nutrient content, the next step is to determine the results of the nutritional content in the sorbet made from *jamu beras kencur*. The way to calculate the percentage of the nutritional content in sorbet is by dividing the nutritional results of the sorbet by the daily nutritional requirement and then multiplying by 100. The calculation results for the nutritional needs of adults aged 19-29 years can be seen in the following table:

Table 3. Nutritional Requirement Calculation Results

No	Nutrient Content	Nutritional Requirement	*Jamu Beras Kencur* Sorbet Nutrient (g)	Percentage (%)
1	Carbohydrates	367.5 g	15.9 g	4.32%
2	Protein	153.12 g	1.24 g	1.3%
3	Fat	40.83 g	0.30 g	0.73%

Source: personal documentation

The average daily calorie requirement for adults aged 19-29 years is 2,450 kcal. Based on the nutritional percentage calculation results in the table above, the carbohydrate content in the *jamu beras kencur* sorbet is 15.9 g, fulfilling 4.32% of the daily carbohydrate requirement from the total daily caloric intake.

The average daily calorie requirement for adults aged 19-29 years is 2,450 kcal. Based on the nutritional percentage calculation results in the table above, the protein content in the sorbet is 1.24 g, fulfilling 1.3% of the daily protein requirement from the total daily caloric intake.

The average daily calorie requirement for adults aged 19-29 years is 2,450 kcal. Based on the nutritional percentage calculation results in the table above, the fat content in the sorbet is 0.30 g, fulfilling 0.73% of the daily fat requirement, which provides 17.89 kcal of the total daily caloric intake.

The benefits of the nutritional contents of carbohydrates, protein, and fat in the ~~rice herbal~~ sorbet are as follows:

a. The benefit of carbohydrates in the *jamu beras kencur* sorbet is to help increase stamina and energy in the body.
b. The benefit of protein in the *jamu beras kencur* sorbet is to build and strengthen body tissues and prevent the growth and spread of cancer cells.
c. The benefit of fat in the *jamu beras kencur* sorbet is its anti-diabetic properties, controlling blood glucose levels, and helping to control body weight.

5. CONCLUSION

Based on the experimental test analyzed using the Likert Scale, *jamu beras kencur* sorbet received a texture score of 77.6%, which falls under the “good” category. The sorbet’s taste received a score of 80%, also classified as “good.” Regarding aroma, the sorbet received a score of 83.2%, and the interpretation criteria were outstanding. Regarding color, the sorbet received a score of 72.8%, and classified as “good”. The organoleptic quality of *jamu beras kencur* sorbet in terms of texture, taste, aroma, and color follows the quality and

DOI: https://doi.org/10.17509/gastur.v12i1.81104
p- ISSN 2776-608X e- ISSN 2776-5970

characteristics of sorbets. The average organoleptic score across all four aspects was 78.4%, with an interpretation of "good."

The nutritional content test in *jamu beras kencur* sorbet per 100g showed 15.90g of carbohydrates, 1.24g of protein, and 0.30g of fat. Based on the results of the analysis carried out, carbohydrate content meets 4.32% of the average daily carbohydrate requirement, protein content meets 1.3% of the average daily protein requirement, calorie content meets 2.91% of the average daily calorie requirement, and fat content meets 0.73% of the average daily fat requirement. Nutritional value information is critical when choosing the type of dish to consume.

Overall, the tests carried out in this study positively contributed to developing traditional beverage innovations with acceptable colors, tastes, textures, and aromas and good macronutrient content for the body.

6. ACKNOWLEDGMENT

We would like to express our sincere gratitude to the Bali Tourism Polytechnic, especially to the Director of the Bali Polytechnic and the Head of P3M for the opportunity and support provided to carry out this research. We fully acknowledge that the success of this research cannot be separated from the support and assistance from various parties. Therefore, we present the results of this research as a form of appreciation for all the contributions made.

7. REFERENCES

Adhawati, N., & Jatmiko, Y. D. (2023). Evaluation of jamu kunyit asam (*Curcuma domestica Val.-Tamarindus indica L.*) as probiotic carrier of *Lactobacillus plantarum* BP102. *International Food Research Journal*, 30(5): 1274-1284. Doi: https://doi.org/10.47836/ifrj.30.5.15

Brown, A. C. (2011). *Understanding Food: Principles and Preparation (4th ed.)*. Belmont, CA: Wadsworth Publishing.

Celi, E. M., & Moore, R. E. (2015). Safeguarding intangible cultural heritage through youth employment and public/private partnerships. *2015 Digital Heritage*, 2: 475-476. Doi: 10.1109/DigitalHeritage.2015.7419555

Cifelli, B., Kurp, J., Clarke, T. B., & Clarke III, I. (2020). A comparative exploration of celebrity chef influence on millennials. *Journal of Foodservice Business Research*, 23(5): 442-470. Doi: https://doi.org/10.1080/15378020.2020.1780188

Craig, W. J., & Brothers, C. J. (2022). Nutritional content of non-dairy frozen desserts. *Nutrients*, 14(19): 4150. Doi: https://doi.org/10.3390/nu14194150

Gernet M. V, Gribkova I. N., Kobelev K. V, Erikovna, N., D, and Kuandykovna, A., E. (2019). Biotechnological aspects of fermented drinks production on vegetable raw materials. *NEWS Natl. Acad. Sci. Repub. Kazakhstan*, 1(433), 223–230. Doi: 10.32014/2019.2518-170X.27

Gilmor, R., Qamar, H., & Huerta, N. (2023). Basic research. *In Translational Surgery*, 15-19. Doi: 10.1016/B978-0-323-90300-4.00002-1

Grunert, K. G., Verbeke, W., Kügler, J. O., Saeed, F., & Scholderer, J. (2011). Use of consumer insight in the new product development process in the meat sector. *Meat Science*, 89(3): 251-258. Doi: https://doi.org/10.1016/j.meatsci.2011.04.024

Haliza, R. L. ., Hidayati, N. N., & Setiaji, B. (2024). Optimalisasi produksi jamu tradisional (beras kencur): Analisis momentum pada pembuatan Jamu Ginggang Yogyakarta dan Jamu Ambal Magelang. *Journal of Mechanical Engineering*, 1(2): 12. Doi: https://doi.org/10.47134/jme.v1i2.2465

Hong, G. P., & Nip, W. K. (1990). Functional properties of precooked taro flour in sorbets. *Food chemistry*, 36(4): 261-270. Doi: https://doi.org/10.1016/0308-8146(90)90065-C

James, C., James, S. J., Hannay, N., Purnell, G., Barbedo-Pinto, C., Yaman, H., & Corry, J. E. (2007). Decontamination of poultry carcasses using steam or hot water in combination with rapid cooling, chilling or freezing of carcass surfaces. *International journal of food microbiology*, 114(2): 195-203. Doi: https://doi.org/10.1016/j.ijfoodmicro.2006.09.019

James, C., Purnell, G. & James, S.J. (2015). A review of novel and innovative food freezing technologies. *Food Bioprocess Technologies*, 8: 1616–1634. Doi: https://doi.org/10.1007/s11947-015-1542-8

Kasapoğlu, K. N., Daşkaya-Dikmen, C., Yavuz-Düzgün, M., Karaça, A. C., & Özçelik, B. (2019). Enrichment of beverages with health beneficial ingredients. *Value-added ingredients and enrichments of beverages*, 63-99. Doi: https://doi.org/10.1016/B978-0-12-816687-1.00003-5

Lafont, C. (2009). Religion and the public sphere: What are the deliberative obligations of democratic citizenship?. *Philosophy & Social Criticism*, 35(1-2): 127-150. Doi: https://doi.org/10.1177/0191453708098758

Landabaso, M. (1997). The promotion of innovation in regional policy: proposals for a regional innovation strategy. *Entrepreneurship & Regional Development*, 9(1): 1-24. Doi: https://doi.org/10.1080/08985629700000001

Marth, E. H., & James, C. (2001). *Technology of the Sorbet Industry*. Berlin, Germany: Springer Science & Business Media.

Martin, C. R. A. (1973). British food journal. *Br. Food J*. 75(6): 169–200. Doi: 10.1108/eb011695

Ningsih, C., Nauval, M. L., & Turgarini, D. (2024). Generation Z entrepreneurial morals towards intention through self-efficacy and motivation, based on creative economy. *Jurnal Moral Kemasyarakatan*, 9(2): 447–456.

Ningsih C & Sudono A. (2016). The Competitiveness of Indonesian tourism industry in facing ASEAN economic community. *Heritage, Culture and Society: Research Agenda and Best Practices in the Hospitality and Tourism Industry*, 361: 361-364.

Ningsih C, Turgarini D, Fransiska TM & Nurhidayat W. (2023). Moeslim-Friendly tourism of Tionghoa Gastronomy in Bogor City, Indonesia. *Proceeding of 4th International Conference on Tourism, Gastronomy, and Tourist Destination (TGDIC 2023)*, 266: 380-381.

Nsibanyoni, N. P., Tsvakirai, C. Z., & Makgopa, T. (2023). The willingness to pay for African wormwood and Cancer bush capsules among youths in Mbombela, South Africa. *Journal of Medicinal Plants for Economic Development*, 7(1): 173. Doi: https://doi.org/10.4102/jomped.v7i1.173

Presenza, A., Abbate, T., Casali, G. L., & Perano, M. (2017). An innovative approach to the intellectual property in haute cuisine. *International Journal of Hospitality Management*, 65: 81-88. Doi: https://doi.org/10.1016/j.ijhm.2017.06.009

Rosenthal, J., Balakrishnan, K., Bruce, N., Chambers, D., Graham, J., Jack, D., ... & Yadama, G. (2017). Implementation science to accelerate clean cooking for public health. *Environmental Health Perspectives*, 125(1): A3-A7. Doi: https://doi.org/10.1289/EHP1018decce

Shaik, M. I., Hamdi, I. H., & Sarbon, N. M. (2023). A comprehensive review on traditional herbal drinks: Physicochemical, phytochemicals and pharmacology properties. *Food Chemistry Advances*, 3: 100460. Doi: https://doi.org/10.1016/j.focha.2023.100460

Silalahi, R.C., Suhaidi, I., & Limbong, L.N. (2014). Pengaruh perbandingan sari buah sirsak dengan markisa dan konsentrasi gum Arab terhadap mutu sorbet air kelapa. *Jurnal*

Rekayasa Pangan dan Pertanian, 2(2): 26–34.

Sipple, L. R., Racette, C. M., Schiano, A. N., & Drake, M. A. (2022). Consumer perception of ice cream and frozen desserts in the "better-for-you" category. *Journal of Dairy Science*, 105(1): 154-169. Doi: https://doi.org/10.3168/jds.2021-21029

Sen, S., Antara, N. & Sen, S. (2021). Factors influencing consumers' to Take Ready-made Frozen Food. *Current Psychology*, 40: 2634–2643. Doi: https://doi.org/10.1007/s12144-019-00201-4

Tupenalay, D. J., Sukardiman, Suciati, Oktarina, R. D., & Handayani, R. (2024). Anti-fatigue activity of syrup containing ethanolic extract of kencur (*Kaempferia galanga L.*) rhizome in Wistar rats. *Journal of Pharmacy and Pharmacognosy Research*, 12(6): 1170-1177. Doi: https://doi.org/10.56499/jppres24.1969_12.6.1170

Wahyuningsih, E. S., Gunarti, N. S., Fikayuniar, L., Rahmawati, I., & Nuraeni, E. (2022). Inovasi tanaman jamu pembuatan es krim temulawak sebagai peningkat nafsu makan. J-ABDI: *Jurnal Pengabdian Kepada Masyarakat*, 2(3): 4413–4418. Doi: https://doi.org/10.53625/jabdi.v2i3.2990

Winesti C & Ningsihc. (2019). Consumers' consciousness of halal certified UMKM snack food products in Bandung City. *The Journal Gastronomy Tourism,* 6 (1): 42-55

Wood, N. I., Stone, T. A., Siler, M., Goldstein, M., & Albin, J. L. (2023). Physician-Chef-Dietitian Partnerships for Evidence-Based Dietary Approaches to Tackling Chronic Disease: The Case for Culinary Medicine in Teaching Kitchens. *Journal of Healthcare Leadership*, 15, 129–137. DOI: https://doi.org/10.2147/JHL.S389429

Yayusman, M.S., Yaumidin, U.K. & Mulyasari, P.N. (2023). On considering Australia: exploring Indonesian restaurants in promoting ethnic foods as an instrument of Indonesian gastrodiplomacy. *Journal of Ethnic Foods*, 10(1): 43. Doi: https://doi.org/10.1186/s42779-023-00207-1

Yuliarti, Nurheti. 2008. *Tips Cerdas Mengkonsumsi Jamu*. Yogyakarta: Banyu Medi.

DOI: https://doi.org/10.17509/gastur.v12i1.81104
p- ISSN 2774-6186 e- ISSN 2716-3970