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INNOVATION OF ORANGE INTO CANDY IN BATU KAANG VILLAGE, KINTAMANI, BALI

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Abstract

Batukaang Village in Kintamani, Bali, is renowned for its high-quality Kintamani oranges (citrus reticulata), known for their unique aroma and flavor. However, marketing efforts largely focus on fresh fruit, resulting in underutilization of surplus or downgraded oranges rejected for size, shape, or color. This surplus, especially during peak harvests, leads to price drops and reduced farmer income. This study addresses the issue by developing a value-added product, Kintamani orange jelly candy as an innovative souvenir aligned with Bali's culinary tourism. Using a qualitative descriptive method and simple experimental design, three gelling agents (seaweed agar, cornstarch, and commercial jelly powder) were tested to find the best formulation for taste and texture. Sensory evaluation by 70 untrained panelists measured preferences across seven attributes: chewy and soft texture, taste, aroma, color, shape, and aftertaste, using a five-point hedonic scale. Product C, made with commercial jelly powder, was most preferred for its soft, chewy texture and pleasant flavor and aroma, though improvements in shape and color were needed. Product A received moderate acceptance, while Product B rated lowest in all categories, indicating a need for reformulation. The findings highlight the potential of Kintamani orange jelly candy as a strategy to reduce fruit waste and enhance the economic value of local produce. It also offers a promising new culinary souvenir to promote Batukaang Village within Bali's tourism sector. Further research is recommended to refine formulations, broaden market reach, and evaluate commercial feasibility on a larger scale.

Keywords: Kintamani Orange, Jelly Candy, Sensory Evaluation

1. INTRODUCTION

The Kintamani orange (Citrus reticulata), cultivated in Batukaang Village in the highlands of Kintamani, Bali, is widely recognized for its high quality, unique aroma, and rich flavor. According to Suardana et al. (2011) and Sugianto (2013), the microclimatic conditions of the region contribute to the exceptional characteristics of this local citrus variety. These qualities have helped establish the Kintamani orange as a premium agricultural commodity within Bali's horticultural sector.

However, despite its premium classification, the economic value of Kintamani oranges remains underleveraged. Astiari (2023) highlights a persistent issue: a substantial volume of the harvest fails to meet retail standards due to mechanical damage, pest attacks, irregular sizing, or imperfect coloration. These downgraded fruits are commonly

discarded or sold at much lower prices, contributing to waste and reduced income for local farmers. Santosa (2019) and Girinatha (2024) further elaborate that seasonal oversupply often leads to significant price drops, directly affecting farmer livelihood and market stability.

While the literature emphasizes the agricultural importance of Kintamani oranges, research on product development and diversification from this fruit is limited. Most academic and government reports focus on cultivation techniques, pest control, or postharvest handling (Suardana et al., 2011; Sugianto, 2013), with little attention given to innovative uses for substandard or surplus harvests. This is particularly concerning in the context of Bali's evolving economic landscape, where tourism, especially culinary tourism, is a dominant sector.

Yani (2018) notes that Bali's accommodation and food service sectors experienced impressive growth, reaching 62.53% in 2024. This growth reflects an increasing demand for unique, high-quality local food products that reflect cultural identity. In support of this trend, previous studies have demonstrated the potential of processed local foods such as Dodol Garut, Toraja coffee, and Balinese cocoa-based chocolate as powerful cultural symbols and profitable tourist souvenirs (Wirawan, 2016; Utami, 2015). These products not only offer economic opportunities to local communities but also function as edible ambassadors of regional identity (Dewi, 2017; Rahman, 2019).

Despite these findings, there is a clear research gap in the utilization of downgraded or non-marketable citrus fruits especially Kintamani oranges for product innovation. While cocoa, coffee, and sticky rice have received significant research and commercial attention, citrus fruits, particularly those rejected from the fresh fruit supply chain, remain largely unstudied in the context of value-added product development.

No existing studies to date have comprehensively explored the transformation of downgraded Kintamani oranges into processed goods such as candy, jam, marmalade, or other shelf-stable food items. This is even though such innovations could simultaneously reduce food waste, increase income, and enhance the visibility of Kintamani citrus in the culinary tourism sector. Moreover, consumer perception, processing techniques, and the market feasibility of products derived from downgraded oranges remain virtually unexplored areas in the current academic discourse.

Given this context, the present study proposes the development of Kintamani orange-based candy as a potential solution to these issues. This initiative aims to turn citrus surplus and waste into a marketable, culturally significant, and economically viable product that aligns with Bali's broader culinary tourism strategy.

The aim of this study is to develop an innovative citrus-based product Kintamani orange candy from surplus and downgraded oranges in Batukaang Village. This initiative is intended not only to optimize the use of rejected fruit but also to introduce a novel local product that can boost the visibility of Batukaang as a culinary destination in Bali.

Specifically, the objectives of this study are (1) to formulate and produce orange candy using substandard Kintamani oranges, and (2) to evaluate consumer acceptance and preference for the developed product. This research is expected to provide both theoretical contributions by expanding knowledge in the field of culinary product development and practical benefits by offering new economic opportunities for citrus farmers and small-scale entrepreneurs in Batukaang.

2. LITERATURE REVIEW

The utilization and diversification of local agricultural products into value-added culinary innovations have gained scholarly attention in recent years. Qisthian (2020) emphasized the significance of developing local economic potential through citrus-based products, particularly the Siam orange in Banyuwangi, Indonesia. His study identified critical factors such as raw material availability, product quality, technological capability, market demand, and human resources as determinants of successful product development. This framework provides a relevant foundation for the current study, which similarly seeks to transform surplus Kintamani oranges into innovative candy products aimed at boosting the local economy in Batukaang Village. Unlike Qisthian's research, which focused on beverages and traditional candied products, the present study proposes a novel application in the form of shelf-stable citrus candy, utilizing different gelling agents for added product differentiation.

Furthermore, Gion (2023) explored the quality attributes of jelly candies made from Kintamani oranges, highlighting consumer preferences related to taste, texture, and appearance. His findings support the potential of Kintamani citrus as an appealing base for confectionery innovation. However, while Gion's study employed agar and gelatin, the current research introduces the use of cornstarch combined with agar, aiming to simplify production processes and reduce reliance on imported gelling agents, which aligns with local resource availability and small-scale manufacturing feasibility. This variation represents an incremental yet important shift in the technological approach to citrus candy production.

Novitasari (2018) contributed further by demonstrating how simple, community-adoptable technologies can be employed to process citrus fruits into syrup in rural Pasaman, Indonesia. Her research underlined the role of straightforward processing methods in empowering local small enterprises (SMEs) and supporting rural economic resilience. Drawing from her insights, this study similarly adopts accessible processing techniques to ensure that Batukaang's orange candy innovation can be realistically implemented by local farmers and home industries.

Beyond national literature, recent international studies also reinforce the relevance of citrus waste valorization and confectionery innovation. Zhang et al. (2021) reviewed sustainable utilization methods for citrus by-products, identifying candy production as a practical and profitable valorization route, especially in tourism regions. Similarly, García-Castello et al. (2020) emphasized the role of functional candy formulations using citrus peels and pulps, contributing to waste reduction and providing added health benefits through natural bioactive compounds. These perspectives not only validate the sustainability angle of the current study but also suggest opportunities for future functional product development based on Kintamani oranges.

Additionally, Khan et al. (2022) highlighted consumer trends favoring natural, regionally sourced, and minimally processed confectionery products, particularly in tourism markets seeking authentic culinary experiences. This trend aligns with Bali's growing culinary tourism sector and supports the strategic positioning of Kintamani orange candy as a signature local souvenir product.

From the reviewed literature, several key issues and research gaps emerge: (1) a lack of diversified product forms beyond traditional beverages and jams for Kintamani oranges; (2) limited exploration of simple, community-adaptable candy production techniques; and (3) an opportunity to align local citrus product innovations with global sustainability and culinary tourism trends. The current study addresses these gaps by

developing an orange candy that not only adds value to surplus Kintamani oranges but also resonates with contemporary consumer preferences for authentic, eco-friendly, and portable food souvenirs.

3. RESEARCH METHODS

This study employed a qualitative descriptive approach to portray consumer liking of both physical and sensory characteristics of Batukaang orange-based candy, and it also incorporated a simple experimental design to develop a jelly candy innovation made from Batukaang oranges. A qualitative approach was selected to gain in-depth understanding of consumer preferences through descriptive data in the form of words rather than solely numbers (Sugiyono, 2019). The descriptive design documented panelists' responses to sensory attributes: taste, color, aroma, and texture, using a 1–5 hedonic scale, in line with standard food research methods (Lawless & Heymann, 2010).

For the experimental component, three gelling agents, seaweed agar powder, cornstarch, and commercial jelly powder, were tested to identify the formulation delivering the most desirable texture and flavor. The choice of gelling agent critically influences jelly products' physical and sensory properties, including firmness and clarity (Vaclavik & Christian, 2014). Fieldwork took place in Batukaang Village, Bangli Regency, Bali, the region's renowned source of Kintamani oranges, where fresh fruit was procured, and local conditions were observed. Laboratory trials and sensory evaluations were conducted at the Food Laboratory of the Bali International Polytechnic in Tabanan. Data collection spanned four months, from February through May 2025, covering preparation, field sampling, lab experimentation, sensory testing, and result analysis.

A total of seventy untrained panelists, ranging in age from 19 to 60 years old, participated in the sensory evaluation. These panelists were carefully selected to represent a diverse group of consumers, including students, office workers, candy enthusiasts, and tourists. Their participation aimed to reflect a broad spectrum of potential market segments for the Kintamani Orange Jelly Candy product.

To ensure relevance and objectivity in the evaluation, several criteria were applied in the panelist selection process. Panelists were required to be at least 18 years of age and to be familiar with the consumption of citrus-based food or confectionery products. Additionally, participants needed to demonstrate a willingness to assess and express their level of acceptance and preference for the product. They were also expected to provide evaluations of key sensory attributes, including taste, aroma, texture, and color as outlined in the hedonic questionnaire.

Sensory data were gathered through a structured five-point hedonic scale questionnaire. This was complemented by direct observation during the tasting process, photographic documentation of the products and procedures, and a review of relevant literature. The responses from panelists were then converted into percentage-based liking scores and analyzed qualitatively to identify dominant patterns in consumer preferences. This method allowed the research to generate insightful interpretations regarding the product's reception and areas for further improvement.

Procedurally, the research began with field observations and fruit selection in Batukaang Village, followed by laboratory formulation trials using the three gelling agents. Once the optimal recipe was identified, samples were packaged and subjected to hedonic testing. All participants provided informed, voluntary consent, and their data were treated confidentially in accordance with ethical guidelines (Resnik, 2018).

Despite its contributions to local agro-product innovation, this study has several limitations. First, the sample of 70 panelists, drawn solely from the Kintamani area, limits the generalizability of the findings to broader populations. Second, employing untrained panelists introduces greater subjective variability than a trained sensory panel. Third, only three gelling agents were evaluated, leaving other potential thickeners (e.g., pectin, gelatin, carrageenan) unexplored. Fourth, data analysis was purely descriptive; inferential statistical tests (e.g., ANOVA) would strengthen conclusions about differences among treatments. Fifth, conducting the research exclusively in Bali means local cultural and environmental factors may have influenced results; testing in other regions would provide a more comprehensive view. Sixth, the four-month timeframe precluded long-term product stability and shelf-life studies, as well as large-scale market response assessments. Finally, this study focused on sensory evaluation without conducting an economic feasibility analysis, which is essential for scaling the product commercially.

This study acknowledges several limitations that may affect the breadth and applicability of its findings. The use of seventy untrained panelists from the Kintamani region limits the generalizability of results, as preferences may not reflect broader consumer populations. The absence of trained sensory evaluators introduces subjective variability, potentially affecting data consistency. Additionally, only three gelling agents were tested, excluding other widely used thickeners such as pectin or gelatin. The research employed purely descriptive analysis without inferential statistics, limiting the strength of comparisons between treatments. Conducting the study solely in Bali also presents potential cultural and environmental biases. Moreover, the limited four-month timeframe did not allow for shelf-life evaluation or broader market testing, and the study did not include an economic feasibility analysis, which is crucial for future commercialization.

4. FINDINGS AND DISCUSSION

This innovation aims to create a high value-added processed product from the local sweet oranges of Batukaang Village. Three jelly candy variants were developed using different methods and combinations of gelling agents: agar-agar, a mixture of agar-agar with jelly powder, and cornstarch. Each variant is designed to achieve optimal texture, flavor, and shelf life according to the characteristics of the ingredients used.

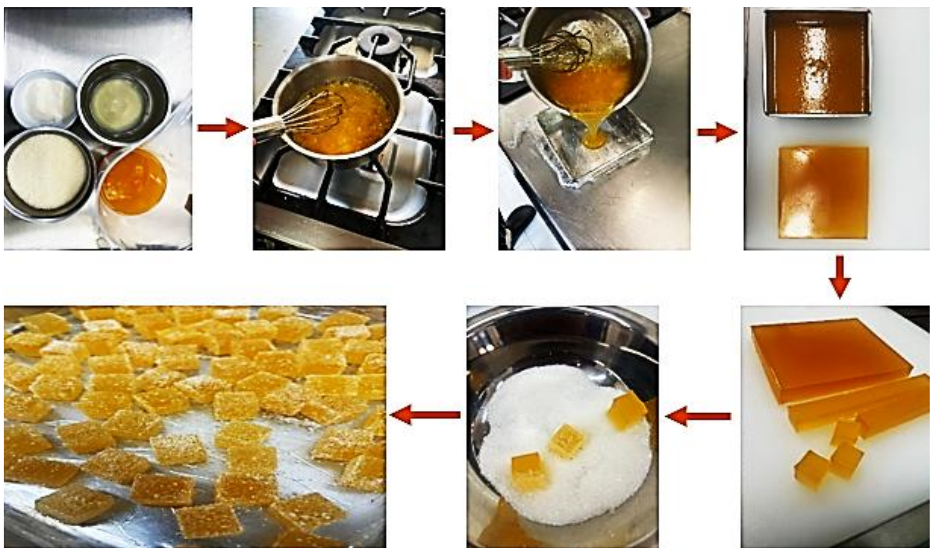

Figure 1. Jelly Candy Production Process Using Batukaang Village Oranges
Source: Researchers (2025)

The production of the orange jelly candy begins with preparing fresh orange juice, which is filtered to remove seeds and fibers, and then mixed with lemon juice to balance the sweet and sour flavors. This mixture is then cooked with gelling agents such as agar-agar, jelly powder, or cornstarch, along with sugar as the main sweetener. The heating process is carried out with continuous stirring until the mixture reaches approximately 107°C, or until it forms a thick, homogeneous batter.

Once cooked, the mixture is poured into trays or molds and chilled until it sets completely. The solidified jelly is then cut into the desired shapes and dried using a dehydrator for about 12 hours at 35°C to achieve a chewy yet dry texture. The final step is coating the candies with fine caster sugar to prevent stickiness and enhance visual appeal before they are packaged.

This process results in fresh, soft, and attractive orange jelly candies with flavor and texture combinations that are adjusted based on the type of gelling agent used. Jelly Candy A uses agar-agar as the primary gelling agent, emphasizing the freshness of the orange and delivering a naturally chewy texture. The process involves boiling orange juice, lemon juice, and sugar with agar-agar until 107°C, followed by molding, chilling, and drying to achieve a stable and long-lasting product.

Jelly Candy B combines agar-agar and jelly powder (Nutrijell), resulting in a more elastic and softer texture. This combination offers a chewier structure with enhanced visual appeal, making it ideal for consumers seeking a unique candy-eating experience. Jelly Candy C uses cornstarch as the thickening agent, combined with butter to deliver a smoother texture and richer flavor. The mixture is cooked until it forms a thick paste, then cooled, cut, and dried to achieve the ideal texture.

The entire process demonstrates meticulous attention to procedural details, including temperature control and drying time, which are crucial for the product's success. Each recipe highlights the potential for diversifying local fruit-based products and serves as an innovative solution to increase the economic value of regional agricultural commodities.

This study involved 70 panelists with a relatively balanced demographic distribution. In terms of gender, the majority were male (55.3%), while female panelists accounted for 44.7%, indicating proportional gender representation. Age-wise, the panel was dominated by individuals aged 20–30 years (40.9%), followed by those aged 30–40 years (23.7%), under 20 years (22.8%), and over 40 years (12.6%). This age diversity provided a broad perspective in the product evaluation.

Most panelists (84.7%) were non-smokers, reflecting a generally healthy lifestyle that supports sharper sensory perception during the assessment of taste, aroma, and texture. Additionally, 63.3% of panelists reported regular coffee consumption, which may influence their sensitivity to bitter or acidic flavors during product testing. Overall, the diverse panelist composition offered a strong and representative basis for evaluating consumer acceptance of the Batukaang orange jelly candy innovation.

a. Respondents' Preference Level towards Jelly Candy Product A

The Jelly A candy product received relatively low preference ratings from respondents, with average scores ranging from 2.0 to 2.4 on a 1–5 scale. The highest-rated attribute was chewy texture (2.4), followed by taste and orange aroma (both 2.3), though none exceeded the midpoint value of 3. The lowest rating was given to the candy's color (2.0), indicating that its visual appeal was a major shortcoming.

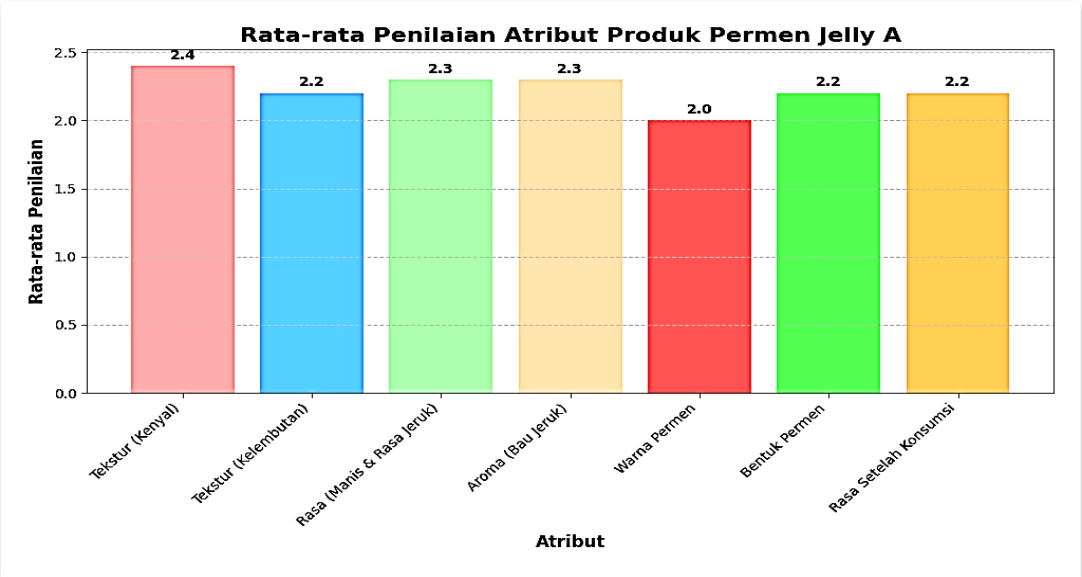

Figure 2. Results of the Liking Test for Jelly Candy A
Source: Researchers (2025)

Overall, Jelly A was found to fall short of consumer expectations in terms of sensory quality, specifically taste, aroma, texture, and appearance. Improvements are needed, particularly in enhancing color, refining texture, and adjusting flavor formulation to better align with target market preferences. A product redesign and formula reevaluation are recommended to boost consumer appeal and acceptance.

b. Respondents' Preference Level towards Jelly Candy Product B

The consumer preference survey for Jelly B candy, based on feedback from 70 respondents, indicates a moderate level of acceptance. Average scores across sensory attributes ranged between 2.0 and 2.4 on a 1–5 scale, suggesting that most respondents felt neutral or slightly favorable, though overall enthusiasm remained limited.

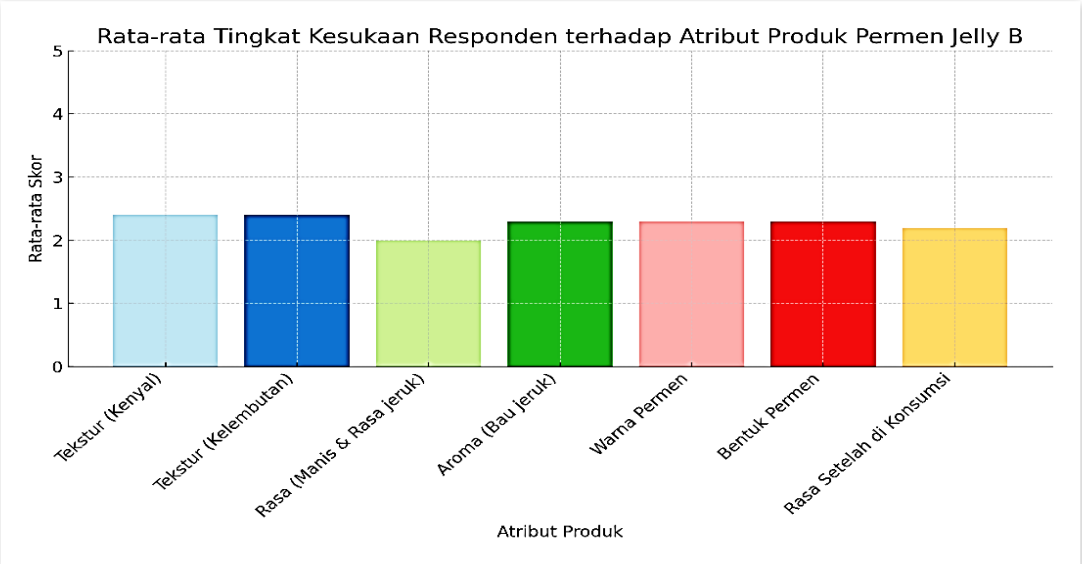

Figure 3. Results of the Liking Test for Jelly Candy B
Source: Researchers (2025)

The highest-rated attributes were chewy texture and softness, each scoring 2.4, highlighting texture as the most appealing aspect of the product. Visual elements such as color and shape also received relatively positive responses (2.3), suggesting acceptable presentation. Conversely, the lowest scores were given to aftertaste (2.2) and orange aroma (2.0), indicating that the flavor experience after consumption and the product's scent did not meet consumer expectations. These findings point to specific areas requiring improvement, particularly in enhancing the product's taste and aroma to create a more enjoyable and lasting impression.

In summary, while Jelly B candy demonstrates strengths in texture, it requires further development in flavor and aroma to boost consumer satisfaction. These insights offer valuable guidance for future product refinement aimed at increasing overall consumer preference.

c. Respondents' Preference Level towards Jelly Candy Product C

Based on the survey results from the consumer acceptance test of Jelly Candy Product C, involving 70 respondents, it can be concluded that, overall, the product received a positive response. The average liking scores for each attribute ranged from 2.6 to 3.6, indicating that the product falls within the categories of "somewhat liked" to "liked." These findings suggest that Jelly Candy C has promising market potential, although there are several aspects that require improvement in order to better satisfy consumer expectations.

The attributes that received the highest ratings in this evaluation were chewy texture, with an average score of 3.6, followed by softness of texture and aftertaste, both earning scores of 3.5. This indicates that respondents particularly appreciated the chewy and soft sensation offered by the product, as well as the pleasant lingering taste after consumption. These texture-related qualities represent the main strengths of Jelly Candy C, which can be maintained and even further emphasized in future product development and marketing strategies.

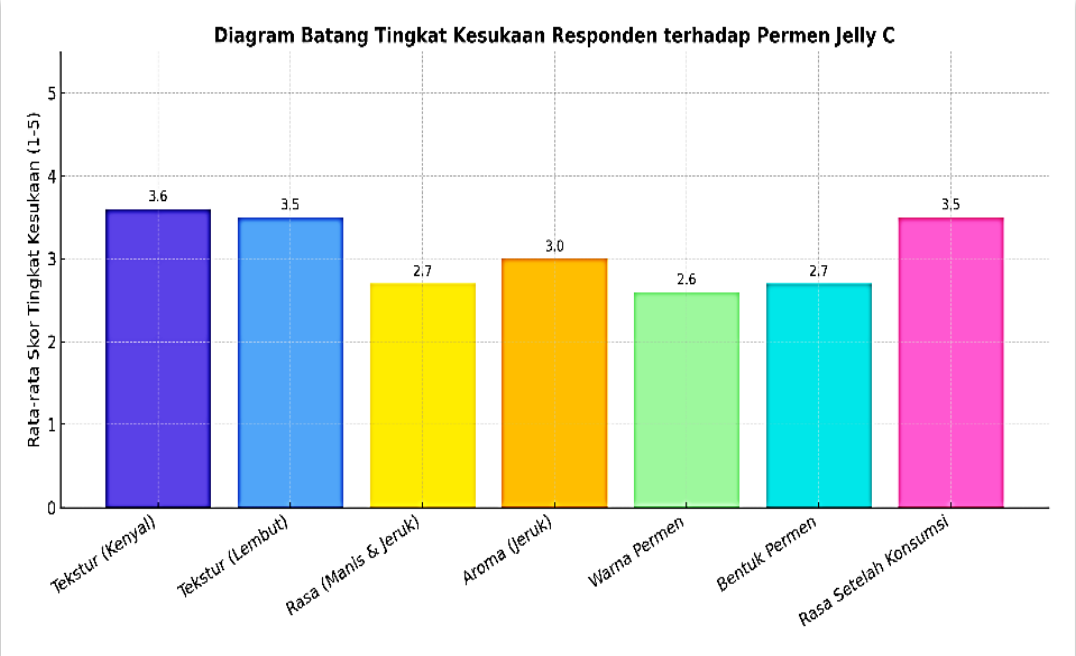

Figure 4. Results of the Liking Test for Jelly Candy C
Source: Researchers (2025)

Conversely, the attribute that received the lowest rating was candy color, with an average score of 2.6. Additionally, the attributes of taste—specifically sweetness and orange flavor—and candy shape also recorded relatively low scores of 2.7 each. This suggests that respondents found the product's visual appearance, in terms of both color and shape, less appealing. Similarly, the sweetness and orange flavor were perceived as weak or not fully aligned with consumer expectations. These aspects highlight critical areas that require attention in the product reformulation process, particularly in enhancing visual appeal and flavor intensity.

Overall, it can be concluded that Jelly Candy C was generally well accepted by consumers, particularly in terms of its texture and aftertaste. However, there is significant room for improvement in the visual aspects, namely color and shape, as well as in strengthening the sweetness and orange flavor, which serve as the product's primary taste identity. By optimizing and enhancing these lower-scoring attributes, Jelly Candy C has the potential to become a more competitive product and better meet consumer expectations.

These findings are further illustrated in the bar chart displaying the average liking scores of respondents across seven sensory attributes of Jelly Candy C. The graph clearly shows that chewy texture ranked the highest with a score of 3.6, followed by soft texture and aftertaste, both scoring 3.5. This reinforces the notion that the enjoyable bite and lingering taste are the product's key appeals.

On the other hand, the candy's color received the lowest score of 2.6, indicating that the product's visual presentation still needs enhancement to attract broader consumer interest. The taste attributes (sweetness and orange flavor) and candy shape, each scoring 2.7, also highlight the need for further flavor formulation and design innovation. Meanwhile, the orange aroma attribute achieved a neutral score of 3.0, suggesting an opportunity to be enhanced in order to deliver a more enticing sensory experience.

In summary, the chart emphasizes that the main strengths of Jelly Candy C lie in its textural characteristics, which are well appreciated by consumers. However, to become more competitive and fully meet market expectations, targeted improvements in the areas of color, shape, core flavors, and aroma are essential steps in the next phase of product development.

5. CONCLUSION

The study concludes that the transformation of substandard Kintamani oranges into jelly candy products presents a viable and innovative solution for reducing agricultural waste while supporting local economic empowerment through value-added culinary tourism products. Based on sensory evaluation of seven key attributes chewy texture, soft texture, taste, aroma, color, shape, and aftertaste, Jelly Candy Product C emerged as the most preferred variant, particularly praised for its soft, chewy texture and pleasant flavor and aroma. Despite minor shortcomings in visual appeal, Product C demonstrates strong potential to be developed into a flagship or premium souvenir product. Jelly Candy Product A showed moderate acceptance with consistent but unremarkable scores across all attributes, suggesting it could serve as a safe, neutral option if improvements are made in taste intensity and visual presentation. In contrast, Jelly Candy Product B scored the lowest in all categories, indicating the need for a comprehensive reformulation to improve texture, flavor clarity, aroma, and overall visual attractiveness. Based on these findings, the recommended strategy is to use Product C's formulation as a benchmark for future development, enhance the flavor profile and aesthetics of Product A, and redesign Product B entirely to meet consumer expectations. Tailored development strategies for each variant are essential to optimize consumer

satisfaction and market competitiveness. Further consumer testing after reformulation, broader demographic sampling, and commercialization feasibility studies are also recommended to expand market reach and maximize the economic potential of Kintamani orange-based products in Bali's culinary tourism industry.

REFERENCES

Astiari, N. M. (2023). Pengolahan Jeruk Non-Grade Pasar Menjadi Produk Olahan Bernilai Tambah. Fakultas Pertanian Universitas Warmadewa.

Dewi, N. L. P. S. (2017). Potensi Jeruk Keprok dan Siam Sebagai Bahan Dasar Produk Permen. Prosiding Seminar Nasional Teknologi Pangan, 121-128.

García-Castello, E. M., Rodríguez-Llorente, D., & Corma, A. (2020). Valorization of citrus waste in candy production: An opportunity for functional confectionery. Food Research International, 137, 109700. https://doi.org/10.1016/j.foodres. 2020.109700.

Gion, A. (2023). Kualitas Permen Jeli Berbahan Dasar Jeruk Kintamani. Jurnal Teknologi Pangan Nusantara, 5(1), 45-52.

Girinatha, I. M. (2024). Analisis Harga Jeruk Kintamani Pada Musim Panen 2024. Buletin Pertanian Bali, 12(2), 33-39.

Khan, M. I., et al. (2022). Consumer trends in natural and functional confectionery: A focus on sustainable and regional specialties. Current Research in Food Science, 5, 1226-1234. https://doi.org/10.1016/j.crfs.2022.10.002.

Lawless, H. T., & Heymann, H. (2010). Sensory Evaluation of Food: Principles and Practices (2nd ed.). Springer Science & Business Media.

Meilgaard, M., Civille, G. V., & Carr, B. T. (2007). Sensory Evaluation Techniques (4th ed.). CRC Press.

Novitasari, L. (2018). Studi Pembuatan Sirup Jeruk Manis Pasaman. Jurnal Teknologi Pangan dan Gizi, 9(2), 112-118.

Qisthian, A. (2020). Pengembangan Produk Olahan Komoditas Jeruk Siam di Kecamatan Bangorejo Kabupaten Banyuwangi berdasarkan Konsep PEL. Jurnal Pembangunan Daerah, 7(1), 33-47.

Rahman, T. (2019). Dampak Diversifikasi Produk Olahan Buah Terhadap Pendapatan Petani. Jurnal Agroindustri Indonesia, 10(3), 207-215.

Resnik, D. B. (2018). The Ethics of Research with Human Subjects: A Guide for Institutional Review Boards. Springer.

Santosa, I. K. (2019). Fluktuasi Harga Jeruk Kintamani Akibat Panen Raya. Jurnal Ekonomi Pertanian dan Agribisnis, 7(4), 54-60.

Stone, H., & Sidel, J. L. (2004). Sensory Evaluation Practices (3rd ed.). Elsevier Academic Press.

Stone, H., Bleibaum, R. N., & Thomas, H. A. (2012). Sensory Evaluation Practices (4th ed.). Academic Press.

Suardana, I. B. G., et al. (2011). Kandungan Nutrisi dan Potensi Ekspor Jeruk Kintamani Bali. Agritech, 31(1), 85-91.

Sugianto, A. (2013). Peluang Ekspor Jeruk Kintamani ke Pasar Asia. Majalah Agribisnis Indonesia, 22(3), 44-47.

Sugiyono. (2019). Metode Penelitian Kualitatif Kuantitatif dan R&D. Alfabeta.

Thiagarajan, S., Semmel, D. S., & Semmel, M. I. (1974). Instructional Development for Training Teachers of Exceptional Children: A Sourcebook. Indiana University.

Utami, T. (2015). Diversifikasi Produk Pertanian untuk Meningkatkan Daya Saing. Jurnal Inovasi Pangan, 8(2), 99-107.

Vaclavik, V. A., & Christian, E. W. (2014). Essentials of Food Science (4th ed.). Springer Science & Business Media.

Wirawan, A. A. G. (2016). Potensi Produk Makanan Olahan dalam Promosi Wisata Daerah. Jurnal Pariwisata Nusantara, 5(1), 12-20.

Yani, N. L. P. (2018). Peran Pariwisata Kuliner dalam Pengembangan Ekonomi Bali. Jurnal Kepariwisataan Indonesia, 13(2), 25-36.

Zhang, M., Bai, W., & Zhang, Z. (2021). Sustainable utilization of citrus by-products: Candy production as a valorization strategy. Journal of Cleaner Production, 293, 126157. https://doi.org/10.1016/j.jclepro.2021.126157.