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PANCAKE ICE CREAM AS A CULINARY INNOVATION PRODUCT: SENSORY EXPERIENCE AND DEVELOPMENT OPPORTUNITIES IN THE DESSERT INDUSTRY

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Abstract

Pancake ice cream is an innovative dessert product that combines the soft and fluffy texture of pancakes with the cold, creamy sensation of ice cream. This product was developed to meet consumer demand for desserts that are practical, visually appealing, and offer a unique sensory experience. The production process of pancake ice cream includes the preparation of pancake batter, controlled-temperature cooking, ice cream filling, followed by folding and serving stages. The combination of warm pancakes and cold ice cream creates a distinctive contrast in temperature and texture, resulting in a harmonious balance of flavor and mouthfeel. Observational results indicate that pancake ice cream has strong appeal, particularly among young consumers and modern dessert enthusiasts who value novelty and aesthetic presentation. In addition, this product demonstrates promising potential for development within the culinary industry, as it utilizes easily accessible raw materials and involves a relatively simple production process. Pancake ice cream can also be customized with various flavors, fillings, and toppings, allowing producers to adapt the product to diverse consumer preferences and market trends. Therefore, pancake ice cream represents a creative dessert innovation with commercial potential and the ability to enhance product diversity in contemporary food service offerings.

INTRODUCTION

The culinary industry has experienced significant transformation in recent decades, driven by rapid changes in consumer lifestyles, technological advancements,

and increasing demand for innovative food products. Modern consumers no longer prioritize taste alone but also consider visual appeal, texture, convenience, and the overall sensory experience offered by a product. Desserts, in particular, have become a dynamic segment of the food industry, as they allow for creativity, experimentation, and fusion between traditional and contemporary elements. One notable example of such innovation is pancake ice cream, a dessert that combines the warmth and softness of pancakes with the cold, creamy texture of ice cream.

Pancake ice cream represents a form of product diversification that merges two widely recognized and popular food items into a single serving. Pancakes are traditionally known as a simple breakfast or snack item made from basic ingredients such as flour, eggs, milk, and sugar. They are valued for their soft texture, mild flavor, and versatility. Ice cream, on the other hand, is a frozen dessert enjoyed across cultures and age groups due to its refreshing sensation, creamy texture, and wide range of flavors. The combination of these two products results in a dessert that offers a unique contrast in temperature and texture, creating a distinctive sensory experience for consumers.

The appeal of pancake ice cream is closely related to current culinary trends that emphasize novelty and experiential dining. The contrast between warm and cold elements stimulates multiple sensory responses, making the product more memorable and enjoyable. Additionally, the visual presentation of pancake ice cream—often folded, rolled, or layered with colorful toppings—enhances its aesthetic value, which is particularly important in the age of social media. Platforms such as Instagram and TikTok have significantly influenced food trends, encouraging the creation of visually appealing and innovative dishes that can attract attention and generate consumer interest.

Another important factor contributing to the popularity of pancake ice cream is its adaptability. This dessert can be customized with various ice cream flavors, toppings, and sauces, such as chocolate, caramel, fruit compotes, nuts, or syrups. This flexibility allows producers to tailor the product to different consumer preferences, dietary considerations, and market demands. As a result, pancake ice cream can be positioned not only as a dessert but also as a signature menu item in cafés, restaurants, and small food businesses.

From a culinary science perspective, pancake ice cream is also interesting due to the interaction between its components. The quality of pancakes depends on factors such as ingredient composition, mixing technique, and cooking temperature, which affect texture, color, and flavor. Similarly, the characteristics of ice cream such as creaminess, melting rate, and flavor intensity are influenced by formulation, processing, and storage conditions. When combined, these two elements must be carefully balanced to ensure product stability and consumer satisfaction. For example, pancakes that are too hot may cause ice cream to melt too quickly, while overly cold pancakes may compromise texture and mouthfeel.

In addition to sensory considerations, pancake ice cream aligns with the growing demand for practical and accessible food products. The ingredients used are generally easy to obtain, and the production process does not require complex equipment. This makes pancake ice cream suitable for small-scale production, culinary education settings, and entrepreneurship development. Students and novice culinary practitioners can use this product as a learning medium to understand basic food processing

techniques, product innovation, and sensory evaluation.

Young consumers, particularly Generation Z, play a significant role in shaping contemporary food trends. This generation is characterized by openness to new experiences, strong visual orientation, and a preference for foods that offer both enjoyment and uniqueness. Pancake ice cream caters well to these preferences by providing a product that is visually attractive, customizable, and enjoyable to consume. Moreover, Generation Z tends to value food products that are affordable, shareable, and suitable for casual dining experiences, further supporting the relevance of pancake ice cream in today's market.

The development of pancake ice cream also reflects broader changes in the dessert industry, where fusion concepts and hybrid products are increasingly popular. By blending elements from different food categories, culinary innovators can create new products that stand out in a competitive market. Pancake ice cream exemplifies this approach by combining bakery products with frozen desserts, resulting in a novel offering that bridges traditional and modern culinary practices.

Despite its growing popularity, pancake ice cream still requires systematic study to better understand its production process, sensory characteristics, and consumer acceptance. Academic research in the field of culinary arts and food science can contribute valuable insights into how ingredient selection, processing methods, and presentation influence product quality and preference. Such research is particularly relevant in educational contexts, where practical experiments help students develop technical skills and critical understanding of food preparation.

This study focuses on pancake ice cream as a culinary product that integrates creativity, sensory appeal, and practicality. By examining the process of making pancake ice cream and observing its characteristics, the research aims to highlight its potential as an innovative dessert product. The study also seeks to contribute to the growing body of literature on modern dessert innovation and provide a reference for future product development in the culinary industry.

Furthermore, pancake ice cream can be viewed as a reflection of how traditional food items can be transformed through innovation without losing their original identity. Pancakes remain recognizable in form and flavor, while ice cream continues to serve as a refreshing component. The integration of these elements demonstrates how culinary creativity can enhance consumer experiences while maintaining familiarity. This balance between tradition and innovation is essential for sustaining consumer interest and acceptance.

In conclusion, pancake ice cream represents a promising dessert innovation that aligns with contemporary consumer preferences and industry trends. Its combination of contrasting textures and temperatures, visual appeal, adaptability, and ease of production makes it an attractive product for both culinary practitioners and entrepreneurs. As interest in creative and experiential food continues to grow, pancake ice cream has the potential to become a staple offering in modern dessert menus. Therefore, exploring its characteristics and production process is both relevant and valuable in the context of culinary studies and food innovation.

LITERATUR RIVIEW

Dessert Innovation in Modern Culinary Trends

Innovation has become a central element in the development of modern culinary

products, particularly within the dessert sector. Changing consumer lifestyles, globalization, and exposure to diverse food cultures have encouraged the creation of new dessert concepts that combine traditional elements with contemporary presentation and sensory appeal. Dessert innovation is no longer limited to flavor variation but extends to texture, temperature contrast, visual aesthetics, and overall consumption experience. Products that successfully integrate these elements tend to attract greater consumer interest and market acceptance.

One prominent trend in dessert innovation is the development of hybrid or fusion products. These products combine two or more familiar food items into a single offering, creating novelty while maintaining consumer familiarity. Examples include croissant-doughnut hybrids, dessert burgers, and frozen-bakery combinations. Pancake ice cream falls into this category, as it merges a warm bakery product with a frozen dessert component. This fusion aligns with the growing demand for experiential food products that provide more than just taste satisfaction.

In addition, innovation in desserts is strongly influenced by visual presentation and social media exposure. Platforms such as Instagram and TikTok have transformed desserts into visual commodities, where appearance can significantly influence consumer choice. Color contrast, plating style, and product uniqueness play a crucial role in shaping consumer perceptions. Pancake ice cream, with its folded or layered structure and customizable toppings, fits well within this visually driven culinary landscape.

From an academic perspective, dessert innovation also reflects the application of food science principles in product development. Understanding ingredient interactions, processing techniques, and sensory outcomes enables the creation of products that are both appealing and technically sound. Therefore, pancake ice cream represents not only a culinary trend but also an example of how innovation, creativity, and scientific understanding intersect in modern dessert development.

Pancakes as a Bakery Product: Characteristics and Function

Pancakes are one of the most widely consumed bakery products due to their simple formulation, versatility, and appealing texture. Traditionally made from flour, eggs, milk, sugar, and leavening agents, pancakes are valued for their soft, fluffy structure and mild flavor. These characteristics make pancakes suitable as a base for both sweet and savory applications, allowing them to be adapted across cultures and culinary contexts.

From a functional standpoint, pancakes serve as an effective carrier for additional ingredients such as sauces, fruits, creams, and spreads. Their porous structure allows them to absorb flavors while maintaining structural integrity when properly prepared. In the context of pancake ice cream, pancakes play a critical role in balancing texture and temperature. The softness of pancakes contrasts with the firmness of frozen ice cream, creating a layered sensory experience.

The quality of pancakes is influenced by several factors, including ingredient ratios, mixing techniques, and cooking temperature. Overmixing can lead to excessive gluten development, resulting in a dense texture, while insufficient mixing may cause uneven structure. Cooking temperature also affects color development and moisture retention. Properly cooked pancakes should have a golden-brown surface and a moist interior, characteristics that enhance their compatibility with ice cream fillings.

In dessert innovation, pancakes are often chosen because they are familiar to

consumers yet adaptable to creative modifications. Their neutral flavor profile allows them to complement various ice cream flavors without overpowering them. As a result, pancakes function not only as a structural component but also as a sensory bridge between traditional bakery products and modern frozen desserts.

Ice Cream: Sensory Attributes and Consumer Appeal

Ice cream is a globally popular frozen dessert known for its creamy texture, refreshing sensation, and wide variety of flavors. It is typically composed of milk or cream, sugar, stabilizers, and flavoring agents, which together create a smooth and palatable product. Ice cream's sensory appeal lies in its ability to provide cooling relief, richness, and flavor intensity, making it a preferred dessert across age groups.

From a sensory perspective, ice cream contributes significantly to the overall eating experience through its mouthfeel, melting behavior, and aroma release. Creaminess is influenced by fat content and air incorporation, while sweetness and flavor complexity are determined by formulation. In combination desserts such as pancake ice cream, the melting rate of ice cream becomes a critical factor, as it affects product stability and consumer satisfaction.

Ice cream also offers extensive opportunities for customization, which is a key factor in its popularity. Flavor variations, inclusions such as chocolate chips or fruit pieces, and topping combinations allow producers to tailor products to different market segments. This flexibility supports its integration into hybrid desserts, where ice cream can enhance both flavor and visual appeal.

In pancake ice cream, ice cream serves as the central flavor component while also creating a temperature contrast with the warm pancake. This contrast stimulates sensory perception and enhances enjoyment. The success of such combinations depends on selecting ice cream varieties that complement the pancake base, ensuring balance rather than dominance. Therefore, ice cream plays a vital role not only as an ingredient but also as a driver of consumer preference in innovative dessert products.

Sensory Experience and Temperature Contrast in Desserts

Sensory experience is a critical determinant of consumer acceptance in food products, particularly desserts. Sensory attributes such as taste, texture, aroma, appearance, and temperature collectively influence how a product is perceived and evaluated. Among these attributes, temperature contrast has emerged as a powerful factor in enhancing sensory stimulation and memorability.

Desserts that combine warm and cold elements create a dynamic eating experience that engages multiple sensory receptors simultaneously. The contrast between the warmth of pancakes and the coldness of ice cream produces a heightened sensory response, often described as indulgent and exciting. This interaction not only enhances pleasure but also differentiates the product from conventional desserts.

Texture contrast further amplifies sensory appeal. Soft and fluffy pancakes paired with smooth and creamy ice cream create a balance that is pleasing to the palate. Research in sensory science suggests that products offering multiple texture dimensions tend to be perceived as more complex and satisfying. Pancake ice cream exemplifies this principle by combining bakery and frozen dessert textures in a single serving.

Aroma also plays a role in shaping sensory perception, particularly as temperature influences aroma release. Warm pancakes release aromatic compounds that enhance flavor perception, while cold ice cream moderates sweetness and richness. This interaction contributes to a balanced sensory profile that appeals to a broad range of

consumers.

Overall, the success of pancake ice cream can be attributed to its ability to deliver a comprehensive sensory experience. By integrating temperature and texture contrasts, the product aligns with contemporary consumer preferences for desserts that offer novelty, indulgence, and multisensory enjoyment.

Consumer Preferences and Market Potential of Hybrid Desserts

Consumer preferences have shifted significantly toward products that offer novelty, personalization, and experiential value. Hybrid desserts, which combine elements from different food categories, have gained popularity as they fulfill these expectations. Such products appeal particularly to younger consumers who seek unique food experiences and value creativity in culinary offerings.

Generation Z, in particular, plays a major role in driving demand for innovative desserts. This consumer group is highly influenced by visual presentation, social media trends, and the ability to customize products. Pancake ice cream aligns well with these preferences, as it is visually attractive, versatile, and suitable for sharing on digital platforms. The ability to choose flavors, toppings, and presentation styles enhances consumer engagement and satisfaction.

From a market perspective, hybrid desserts offer strong commercial potential due to their differentiation and adaptability. Pancake ice cream can be positioned as a premium dessert, a café signature item, or a street food product, depending on pricing and presentation. Its relatively simple production process and accessible ingredients make it feasible for small-scale businesses and culinary startups.

In addition, hybrid desserts contribute to menu diversification, allowing food service operators to refresh offerings without extensive investment. Pancake ice cream can be adapted seasonally or regionally, further increasing its market relevance. As consumer interest in experiential and innovative food continues to grow, hybrid desserts like pancake ice cream are likely to maintain strong appeal.

In conclusion, the literature suggests that pancake ice cream has significant potential as a modern dessert product. Its alignment with sensory preferences, consumer trends, and market demands positions it as a promising innovation within the contemporary culinary landscape.

RESEARCH METHODS

The method used in the preparation of pancake ice cream is an experimental and hands-on practice approach. This method is carried out by preparing pancake batter, cooking it until fully cooked, and then combining it with ice cream as a filling or topping. This process aims to produce a food product that offers a combination of soft texture, sweet flavor, and attractive presentation.

The first stage is the preparation of ingredients and equipment. The ingredients used include wheat flour, eggs, liquid milk, granulated sugar, baking powder, margarine, and various flavors of ice cream. The equipment consists of a mixing bowl, whisk, non-stick pan, spatula, and stove. All tools are cleaned beforehand to ensure hygiene and maintain product quality.

The second stage is the preparation of the pancake batter. Eggs and sugar are whisked until well combined, followed by the addition of liquid milk. After that, wheat flour and baking powder are gradually added while stirring continuously until a smooth, lump-free batter is obtained. Melted margarine is added at the final stage to enhance

aroma and create a soft texture.

The third stage is the pancake cooking process. The pan is heated over low heat, and an appropriate amount of batter is poured into the pan. The pancake is cooked until bubbles appear on the surface and the bottom turns golden brown, then flipped and cooked until fully done.

The final stage is the serving of pancake ice cream. The cooked pancake is allowed to cool slightly before being filled with or topped with ice cream according to preference. The pancake may be folded or rolled and then served with additional toppings such as chocolate sauce, honey, or fresh fruit to enhance flavor and visual appeal.

RESULTS AND DISCUSSION

Pancakes are made from wheat flour-based dough, eggs, liquid milk, melted margarine, and baking powder that serve as a building block. The well-mixed dough is then cooked on a flat pan (Teflon) over low heat until air bubbles appear and the color changes to golden brown. The result is a soft and light omelet (pancake). The ice cream used can vary in flavor (generally vanilla, chocolate, or strawberry) and serve as a filling or complementary topping. The quality of ice cream is influenced by the raw materials, freezing process, and aeration (overrun) that determine its soft texture. Cooked pancakes are stacked or folded, then served with one or a few scoops of ice cream on top, often with complementary toppings such as chocolate sauce, maple syrup, or fresh fruit added.

Discussion The combination of pancakes and ice cream creates an interesting sensory contrast:

- Temperature Contrast: The warmth of the pancakes is the opposite of the cold temperature of the ice cream, providing a unique sensation when eaten.
- Texture Contrast: The soft, tender, and slightly chewy texture of the pancakes (if the dough is rested for a while) combines with the creamy softness and stiffness of the ice cream.
- Flavor Balance: The savory and slightly sweet flavors of pancakes complement the sweet and intense flavors of the various flavor variants of ice cream and additional toppings.

Characteristics of Ice Cream Products

The substitution of cowpea tempeh extract for water and the replacement of CMC or SP with extract paste can influence the characteristics of ice cream. An evaluation of the overall ice cream characteristics was conducted to determine whether these substitutions had positive or negative effects on product quality. The results indicate that such substitutions can produce ice cream with improved characteristics compared to ice cream without treatment.

The use of tempeh extract substitution contributes to a higher nutritional content and reduces excessive cold sensation in ice cream. However, excessive total solids may cause ice cream to become heavy, wet, sticky, and less refreshing. The increase in total solids content in the ice cream reached 16.09%. The level of substitution applied to the ice cream product was directly proportional to the increase in total solids content and showed a statistically significant difference. These findings are consistent with previous studies, which suggest that the increase in total solids may originate from components

such as glucomannan, starch, protein, fat, calcium oxalate, and ash.

The sucrose content of ice cream in treatments K, A, B, and C was recorded at 20.67%, 20.73%, 20.80%, and 20.87%, respectively, with no significant differences observed among treatments. These results indicate that the sucrose content met the Indonesian National Standard for ice cream (SNI 01-3713-1995), which specifies a minimum sucrose level of 8%. Sugar is an essential component of ice cream and contributes to the total solids content. The absence of significant differences in sucrose levels among treatments is attributed to the uniform concentration of sucrose added in each formulation.

From a textural perspective, the ice cream dough exhibited improved structural integrity, resulting in a firmer scoop and slower melting behavior. This finding aligns with theoretical principles stating that certain stabilizing compounds can enhance the melting resistance of ice cream. Previous research has shown that konjac glucomannan increases water-binding capacity, thereby strengthening ice cream texture and improving melting resistance.

Sensory evaluation was conducted using hedonic testing, which assesses product acceptance based on the senses of sight, touch, smell, and taste. Hedonic testing involves assigning scores to product attributes to determine panelists' preferences. In addition to sensory quality, microbiological analysis was also considered. Total plate count, which includes bacteria, molds, and yeasts, serves as an indicator of hygiene and sanitation during processing. This parameter is essential for determining product acceptability based on microbiological quality.

Furthermore, the presence of Salmonella sp., a pathogenic bacterium that can cause salmonellosis, was evaluated. Contamination by Salmonella indicates inadequate sanitation during food handling. Milk and dairy-based products are particularly susceptible to contamination; therefore, the identification of Salmonella sp. is crucial to prevent foodborne diseases and ensure product safety.

Color is the most easily observed organoleptic parameter by panelists. The color scores of ice cream for treatments A, B, and C were 3.30, 3.10, 2.90, and 2.90, respectively. The highest color score was observed in the control treatment, while the lowest scores were found in treatments B and C. This result indicates that the substitution treatments slightly affected the visual appearance of the ice cream.

Texture is a critical parameter that influences mouthfeel and overall eating experience. The texture scores of ice cream for treatments A, B, and C were 2.80, 2.87, 3.13, and 3.27, respectively. The highest texture score was achieved by treatment C, whereas the lowest score was recorded in the control treatment. The substitution of ingredients in the ice cream formulation tended to increase texture scores, as it contributed to a higher total solids content.

An increase in total solids improves the structural properties of ice cream by enhancing its body and consistency, resulting in a smoother and softer texture. Consequently, the improved texture led to higher sensory acceptance. These findings suggest that ingredient substitution in ice cream formulations can positively influence

textural quality, thereby improving overall product quality.

CONCLUSION

Pancake ice cream is a processed food product that combines pancakes as a wrapper with ice cream as a filling, resulting in a unique and appealing dessert that offers a balanced combination of the soft texture of pancakes and the cold sensation of ice cream. The production process is relatively simple, utilizing easily obtainable ingredients and uncomplicated equipment.

Based on the production process, it can be concluded that the quality of pancake ice cream is strongly influenced by the level of pancake doneness, the temperature of the ice cream during filling, and the freezing process after assembly. Pancakes that are too hot may cause the ice cream to melt rapidly, while proper freezing helps maintain the product's shape, texture, and overall stability.

Overall, pancake ice cream has significant potential to be developed as a practical training product, a form of culinary innovation, and a business opportunity. Its wide variety of possible flavors, shapes, and toppings, along with its strong appeal to diverse consumer groups, makes pancake ice cream a promising dessert product in the modern culinary industry.

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