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The Bread Production Process in Ensuring Product Quality at Holland Bakery Semarang

Nilam Putri Anggraini*, Keisha Nur Ananda Putri, Syifa Razita Dewi, Khoerunisa Putri Nurhaliza, Laila Dwi Septiyana, Dyah Ajeng Firastris, Early Fahrezy Faradina, Octavianti Paramitha

Universitas Negeri Semarang, Indonesia

*Corresponding Author: nilamputri000@students.unnes.ac.id

Abstract

The rapid growth of the bakery industry in Indonesia is driven by a shift in lifestyle toward practical, ready-to-eat foods. This phenomenon has sparked intense competition in the market, making it imperative for businesses to offer safe, high-quality, and consistent products. Within the food industry chain, the production process plays the most critical role, as negligence in any single phase can compromise the final product's quality. Holland Bakery Semarang addresses this challenge by implementing a structured production workflow to maintain its reputation and product quality. This study aims to analyze each production phase at Holland Bakery Semarang and its contribution to quality control. The findings confirm that the bread-making process at the facility operates systematically, encompassing mixing, molding, proofing, baking, and packaging. This entire sequence is strictly adhered to in accordance with the company's operational standards to ensure the stability of the bread's physical properties, taste, and hygiene. Thus, measured production management is the key to maintaining product quality consistency. This study is expected to provide practical insights into food management while serving as a scientific reference for the fields of culinary arts and food technology.

Keywords: production process, product quality, bread, Holland Bakery Semarang

INTRODUCTION

The growth of the industrial sector in Indonesia, particularly in areas like Cikarang, has created a dynamic business ecosystem that The bakery industry is one of the sectors within the food industry that continues to experience rapid growth in Indonesia. Changes in public lifestyles, which now prioritize convenience, have driven high consumption rates of bakery products as an alternative fast food (Sasongko et al., 2022). Consequently, competition among bakery businesses has become increasingly fierce, requiring every company to produce high-quality, safe-to-consume products with well-maintained quality consistency (Yuliaty et al., 2020).

In the effort to produce quality products, the production process is a critical factor (Ashriana & Fitriyani, 2020). The production process is a series of activities that transform raw materials into finished products through specific stages by utilizing labor, equipment, and technology. Each stage of the production process plays a vital and interconnected role in achieving good end-product quality (Budiartami & Wijaya, 2022). Therefore, an error at any single stage of production can have a direct impact on the decline of product quality (Hairiyah et al., 2022).

Holland Bakery is a widely recognized bakery company in Indonesia with a strong reputation for producing bread products of the highest and most consistent quality (Budiartami & Wijaya, 2022). In its operational activities, Holland Bakery implements a well-structured production process ranging from raw materials to the packaging stage. Based on the industrial internship activities that have been carried out, it is known that the bread production process at Holland Bakery involves several key stages, such as dough mixing, shaping, fermentation, baking, and packaging (Ashriana & Fitriyani, 2020). Each of these stages contributes significantly to determining the final quality of the product. Therefore, it is essential to analyze this production process to understand how each stage functions in

maintaining the quality of the bread products.

Based on the explanation above, this study aims to analyze the bread production process in maintaining product quality at Holland Bakery Semarang. The results of this study are expected to provide a clear overview of the importance of the production process in yielding quality products, as well as serve as an additional reference for the advancement of knowledge in the fields of culinary arts and the food industry.

METHOD

This study employs a qualitative approach using descriptive methods. This approach was chosen because the study aims to directly describe and understand the bread production process in maintaining product quality, while the descriptive method was selected to provide a systematic overview of the stages of the production process.

The data sources in this study consist of primary and secondary data. Primary data was obtained directly through observation and interviews during the internship, and secondary data was obtained from books, journals, and literature related to the production process and product quality.

RESULTS AND DISCUSSION

Based on the Industrial Internship (PKL) conducted at Holland Bakery Semarang, a comprehensive overview was obtained regarding the bread production process, which is implemented in a systematic and standardized manner. The production process at Holland Bakery Semarang encompasses five main stages: dough mixing, dough shaping (moulding), fermentation (proofing), baking, and packaging. All of these stages are carried out in accordance with the Standard Operating Procedures (SOPs) established by the company to ensure the consistency of the resulting product quality.

During the internship, it was found that Holland Bakery Semarang applies strict supervision at every phase of production. The raw materials used are high-quality ingredients that have undergone a selection process. Production staff are also required to comply with food hygiene and safety standards, ranging from wearing clean production attire to following sanitation procedures in the work area. The implementation of these standards reflects Holland Bakery's commitment to delivering products that are safe for consumption while maintaining consistent organoleptic quality.

Discussion

Dough Mixing

The first stage in the bread production process at Holland Bakery Semarang is dough mixing. At this stage, all raw materials are combined using a mixer until a homogeneous and elastic dough is formed. The mixing process is carried out in two phases: the first phase combines all dry ingredients, and the second phase gradually incorporates the wet ingredients until the dough reaches the desired level of elasticity.

The quality of the dough at the mixing stage greatly influences the texture of the resulting bread. Wheat flour as the primary ingredient plays a crucial role, as its protein and gluten content affects its rheological properties, which directly contributes to the volume, crumb structure, and softness of the bread (Muttakin et al., 2022). An imperfect mixing process will inhibit the formation of the gluten network, preventing the bread from rising optimally. Abidin et al. (2022), in their research at UMKM Anni Bakery and Cake, also found that non-standard bread shapes can be traced back to unstandardized mixing procedures.

Dough Shaping (Moulding)

After the mixing process is complete, the dough is divided and shaped according to the type of product being produced. The moulding process at Holland Bakery Semarang is carried out in a standardized manner using tools and molds to ensure that the weight and shape of each product are uniform. This uniformity of shape is one of the important aspects of physical product quality control.

Consistent shaping not only affects the appearance of the product, but also influences the uniformity of the subsequent proofing and baking processes. Dough pieces of unequal size and shape will undergo different fermentation and baking times, potentially resulting in defective products with

non-uniform sizes. This issue is consistent with findings from research at PT. Bapak Bakery, which showed that non-standard shapes and sizes are the most frequently occurring types of product defects, and that the root causes can be addressed through improved procedures at the dough shaping stage (Saputra et al., 2023).

Fermentation (Proofing)

The fermentation or proofing stage is the process of dough leavening, which takes place in a fermentation room or cabinet with strictly controlled temperature and humidity conditions. During this stage, the yeast present in the dough produces carbon dioxide (CO₂) gas, causing the dough to rise and form the characteristic porous texture of bread. At Holland Bakery Semarang, the proofing process is conducted by maintaining appropriate environmental conditions to ensure optimal fermentation.

Controlling temperature and humidity during the proofing stage is a critically important factor. The proofing process requires stable temperature and humidity, as unstable environmental conditions will cause the bread's texture quality to deteriorate (Bahrianur et al., 2023). Furthermore, porosity is an important quality parameter for bread, as high-quality bread will have uniform pores, resulting in a texture that is easy to chew and soft (Heuristic, 2023). Observations at Holland Bakery Semarang show that the proofing process is consistently monitored to avoid both under- and over-fermentation, both of which can significantly reduce the texture and flavor quality of the bread.

Baking

The baking stage is carried out using large-capacity ovens with temperature settings adjusted to suit the type of product being baked. A proper baking process will yield bread with a golden-brown surface crust, a soft interior texture, and a distinctive aroma. Holland Bakery Semarang applies specific temperature and baking time settings for each type of bread to prevent burnt or underbaked products.

Baking is the most critical process in bread production, as the required temperature and duration vary according to the type of bread, the size of the dough, and the baking pan used (Astuti, 2015). Oven temperature has been proven to have a significant effect on the quality of sweet bread in terms of crust color, taste, aroma, and texture (Astuti, 2015). Furthermore, improper oven temperature control is the primary cause of burnt bread defects; therefore, the use of thermometers to ensure oven temperature stability along with the implementation of stricter SOPs has been proven to significantly reduce the number of defective products (Wahyudi et al., 2024). The routine monitoring of oven conditions by operators at Holland Bakery Semarang is a concrete manifestation of quality control at this critical stage.

Packaging

The final stage of the production process is packaging. After the bread has been baked and cooled to a safe temperature, the products are packaged using clean, airtight packaging materials to maintain product freshness and prevent contamination. Packaging at Holland Bakery Semarang is carried out with attention to both hygiene and aesthetics, given that packaging is one of the elements that influences consumer perception.

Packaging technology makes an important contribution to improving the quality and safety of food products, including extending shelf life and preventing damage caused by microorganisms (Suherman et al., 2023). In addition, food safety and sanitation during the packaging stage are critically important as they are directly related to consumer trust in the purchased product (Juhaina, 2021). Products that do not meet visual standards are sorted prior to packaging as part of the final quality control process, ensuring that only products that meet all company standards reach the consumer.

The Role of the Production Process in Maintaining Product Quality

Overall, the findings of this study confirm that a structured and standardized production process plays a central role in maintaining the quality of bread products at Holland Bakery Semarang. Each production stage is interconnected and makes a significant contribution to the physical aspects (shape, color, texture), organoleptic qualities (taste and aroma), and hygiene of the product. Properly implemented quality control has been proven to minimize the risk of product defects and ensure that production output meets customer expectations (Wahyudi et al., 2024). Furthermore, the consistent application of quality control also contributes to increased customer trust, the preservation of the company's reputation, and strengthened competitiveness in an increasingly competitive market (Wahyudi et al., 2024).

The strict operational standards implemented at Holland Bakery Semarang reflect the principles of modern food industry practice, which prioritize quality consistency at every critical point of the production process. With a measured production management system, Holland Bakery is able to maintain quality consistency as a competitive advantage amid the increasingly intense competition in the bakery industry in Indonesia.

CONCLUSION

At Holland Bakery Semarang, the bread-making process is carried out systematically and according to standardized procedures across five main stages: dough mixing, dough shaping, proofing, baking, and packaging. Each production stage is strictly carried out in accordance with the company's Standard Operating Procedures (SOPs) to ensure that the bread products remain consistent in terms of physical characteristics (shape, color, texture), organoleptic properties (taste and aroma), and hygiene and safety. Proper quality control at every critical step has proven to maintain quality consistency, build customer trust, and enhance Holland Bakery's competitiveness in the face of intense competition in the baking industry.

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