

Roa Fish Sambal Innovation for Culinary MSMEs in Sidoarjo

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ABSTRACT

This study aims to examine the innovation of processing roa fish into chili sauce by MSME actors in Sidoarjo, as well as evaluate the market potential and the economic-social impact it causes. The method used is a descriptive qualitative approach with data collection techniques in the form of interviews, observations, and documentation of culinary MSME actors in the Candi area, Sidoarjo. The results of the study show that the production process of roa fish sauce is carried out systematically through the stages of selecting raw materials, processing chili sauce, and packaging. This product received a very positive market response, with the majority of consumers expressing high interest in the unique taste of chili sauce. In addition to increasing the income of business actors, this innovation also encourages job creation, women's empowerment, and the involvement of the younger generation in the entrepreneurial ecosystem. Roa fish sauce not only strengthens the competitiveness of local products in the midst of increasingly fierce market competition, but also strengthens the role of MSMEs in the growth of culinary-based creative economy.

Keywords: Culinary Innovation, Roal Fish Sauce, MSMEs, Sidoarjo

ABSTRAK

Penelitian ini bertujuan untuk mengkaji inovasi pengolahan ikan roa menjadi sambal oleh pelaku UMKM di Sidoarjo, serta mengevaluasi potensi pasar dan dampak ekonomi-sosial yang ditimbulkannya. Metode yang digunakan adalah pendekatan kualitatif deskriptif dengan teknik pengumpulan data berupa wawancara, observasi, dan dokumentasi pelaku UMKM kuliner di daerah Candi, Sidoarjo. Hasil penelitian menunjukkan bahwa proses produksi kecap ikan roa dilakukan secara sistematis melalui tahapan pemilihan bahan baku, pengolahan sambal, dan pengemasan. Produk ini mendapat respons pasar yang sangat positif, dengan mayoritas konsumen menyatakan minat yang tinggi terhadap rasa unik sambal. Selain meningkatkan pendapatan pelaku usaha, inovasi ini juga mendorong penciptaan lapangan kerja, pemberdayaan perempuan, dan keterlibatan generasi muda dalam ekosistem kewirausahaan. Kecap ikan roa tidak hanya memperkuat daya saing produk lokal di tengah persaingan pasar yang semakin ketat, tetapi juga memperkuat peran UMKM dalam pertumbuhan ekonomi kreatif berbasis kuliner.

Kata Kunci: Inovasi Kuliner, Kecap Ikan Roa, UMKM, Sidoarjo

INTRODUCTION

Cuisine is an integral part of a society's cultural identity and plays a vital role in social, economic, and cultural dynamics. In Indonesia, food not only reflects the diversity of ethnicities and geography but also serves as a medium for expressing evolving local identities. Culinary transformation referring to changes in the way food is produced, served, and consumed has become a significant topic in contemporary cultural studies. According to (Hanalivia et al., 2025), food functions not only as a biological necessity but also as a symbol of social and cultural identity. Meanwhile, (Irwansyah et al., 2022) emphasize the importance of understanding cuisine as a dynamic cultural practice, subject to appropriation, modification, and recontextualization.

A tangible example of culinary transformation is the processing of roa fish into chili sauce, which is now being developed beyond its region of origin. Roa fish, also known locally as *julung-julung* in North Sulawesi, is a type of pelagic sea fish that lives in coastal to offshore waters. It is typically smoked for several days, producing a distinct savory and strong aroma (Utami et al., 2024). In addition to its unique flavor, roa fish is also highly nutritious, particularly rich in protein and omega-3 fatty acids, which are beneficial for health. In its place of origin, roa fish is commonly processed into a signature Manado chili sauce known as *sambal roa* a dish that blends smoked fish meat with chili, shallots, and local spices to create a spicy, savory, and aromatic flavor (Usman et al., 2021).

In the context of local culinary development, the transformation of roa fish into chili sauce in Sidoarjo represents an innovation that utilizes ingredients from outside the region and creatively adapts them to suit local market tastes. This innovation not only enriches the culinary landscape but also creates new economic opportunities, especially for MSMEs. According to (Riyanto et al., 2023), the processing of chili sauce based on local raw materials like roa fish has great potential to be developed as a regional flagship product due to its long shelf life and the added value it generates.

Nevertheless, the development of roa fish chili sauce in areas such as Sidoarjo faces several challenges, including limited supply of roa fish dependent on seasonal and geographical factors and low initial market acceptance of products with unfamiliar flavors. However, with the right marketing strategies, including the use of digital media and flavor adaptation to match local preferences, roa fish chili sauce has the potential to become a distinctive culinary product with strong market competitiveness. (Pontoh et al., 2023), highlight the importance of digitalization and innovation in marketing to expand the reach of local products to regional and even national markets.

Therefore, this study aims to examine the transformation process of roa fish into chili sauce, explore its market potential in Sidoarjo, and assess its impact on the local economy and social identity. A qualitative approach is employed to gain deeper

insight into how entrepreneurs and consumers respond to the emergence of this product, and how culinary adaptation contributes to shaping local cultural and economic dynamics.

METHOD

This research adopts a descriptive qualitative approach to explore the innovation of roa fish sambal and its influence on culinary MSMEs in Sidoarjo. The study focuses on MSME players in the Candi area who are actively engaged in producing and marketing roa fish sambal as either a primary or complementary product. The data comprises both primary and secondary sources. Primary data were gathered through semi-structured interviews, direct observations, and documentation, while secondary data were sourced from literature, MSME records, and relevant government agencies (Rimawan et al., 2024). The data collection technique was carried out through semi-structured interviews with MSME actors and observes to directly understand the chili sauce production process, as well as promotional activities on social media or local markets. The research instruments include interview guidelines, observation notes, and documentation tools such as voice recorders and cameras. The validity of the data is tested through triangulation of sources and methods so that the research results are more accurate and reliable.

RESULTS AND DISCUSSION

Production Process of Roa Fish Sauce

The production process of roa fish sauce by culinary MSMEs in Sidoarjo is carried out through several standardized stages to maintain the quality of taste, texture, and durability of the product. These stages include:

1. Procurement of Raw Materials

The procurement of raw materials is the initial and crucial stage in the production process of roa fish sauce. The main ingredient in the form of smoked roa fish is usually obtained from the Sulawesi region, which is known as the center of producing the best roa fish with a distinctive meat quality and smoky aroma. In addition, complementary ingredients such as red chili, onion, garlic, tomatoes, cooking oil, salt, and sugar are taken from local markets or trusted food distributors. The selection of raw materials must pay attention to freshness, cleanliness, and stock availability so that the production process runs smoothly and the final result remains consistent. According to (Zed et al., 2024), the quality of raw materials greatly determines the taste and durability of processed food products, so the selection of the right ingredients is an important requirement in the small-scale food industry.



Figure 1. & Figure 2. Ingredients for Making Roa Fish Chili Sauce

2. Chili Sauce Manufacturing

After the raw materials are prepared, the next stage is the process of making chili sauce. This process begins with mashing spices such as chili, onion, and tomatoes that have been fried to reduce their moisture content. The roa fish meat that has been cleaned of the thorns and shredded is then mixed into the spices and cooked slowly over low heat. This process lasts for 1–2 hours until the chili sauce is cooked, the spices are absorbed, and the water evaporates completely. Stir is carried out regularly so that it does not burn and the chili sauce does not go stale quickly. According to (Makatita & Touwely, 2022), the right cooking technique has a great effect on the stability of the texture and color of processed chili products.



Figure 3. & Figure 4. Cooking Process of Roa Fish Chili Sauce

3. Packaging

The final stage in the production process is the packaging of the cooked chili sauce. Chili sauce is packaged while still hot in a glass or heat-resistant plastic bottle that has been sterilized beforehand. According to (Rafsyani Zani & Supriyanto, 2021), this process is important to maintain food safety and extend shelf life. Once packaged, the bottle is left until the temperature drops and stored in a clean place before being marketed. This stage is very important to maintain food quality and safety before it reaches consumers.



Figure 5. Packaging of Roa Fish Chili Sauce

Market Acceptance of Roa Fish Sambal

The market acceptance of roa fish sauce in Sidoarjo shows a positive trend. This product is able to attract consumer interest because it offers a different taste sensation from chili sauce in general. The distinctive aroma of smoked fish combined with a savory spicy taste is a uniqueness that has not been found in many local culinary products in East Java. Consumers consider roa fish sambal as a culinary innovation that is not only delicious, but also has cultural value, considering that roa fish is a typical ingredient from the Eastern Indonesia region. This opens up new market opportunities for MSME actors in Sidoarjo to reach a wider segment of consumers, both from local and outside the region.

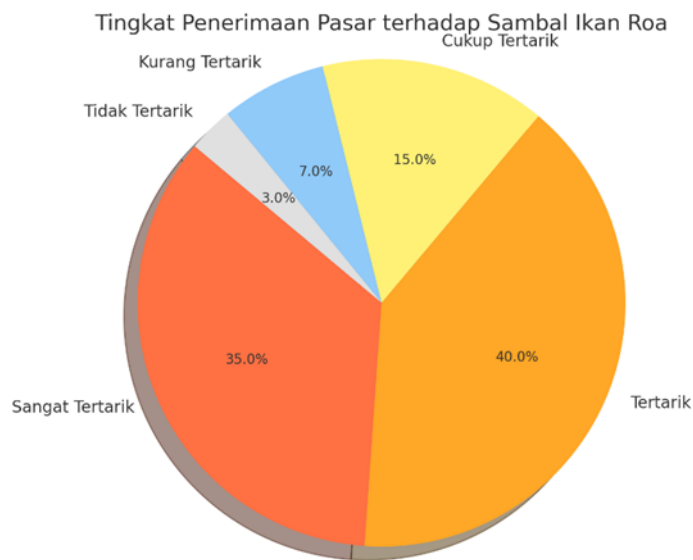


Figure 6. Market Acceptance Rate for Roa Fish Chili Sauce

Based on the pie diagram that shows the level of market acceptance of roa fish sauce. From this visualization, it can be seen that the majority of consumers are in the "Interested" (40%) and "Very Interested" (35%) categories, indicating a very positive market acceptance of the product.

In addition to the taste factor, packaging and branding are also determinants of the success of this product in the market. MSMEs that are able to present attractive, informative, and hygienic packaging tend to get a better response from consumers. Roa fish sauce products are packaged in plastic bottles that are practical and durable, equipped with labels displaying the company's logo, composition, expiration date, and contact information. Professional packaging design is able to increase consumer confidence in product quality, especially for those who buy through online platforms or as regional souvenirs (Lohoo & Palenewen, 2020).

The distribution channel of roa fish sauce is now expanding. In addition to being sold directly at MSME outlets, this product will also soon be marketed through souvenir shops, local minimarkets, and digital platforms such as Shopee, Tokopedia, and social media. Digital marketing plays an important role in increasing product visibility, especially among younger generations who actively seek out food references through Instagram or TikTok (Hidayati et al., 2024). Some MSMEs even take advantage of endorsements from food vloggers or local influencers to expand their market reach.

Consumer satisfaction with products also encourages repeat orders, as well as word-of-mouth promotions. Positive testimonials provided by customers are an important factor in building product reputation (Bakari et al., 2023). Consumer satisfaction with products also encourages repeat orders, as well as word-of-mouth promotions. Positive testimonials provided by customers are an important factor in building product reputation

Economic and Social Impact

The innovation of roa fish sauce has made a significant contribution to improving the economy of MSME actors in Sidoarjo. One of the most obvious economic impacts is the gradual increase in business income. Since this chili sauce was launched as a superior product, many MSME players have experienced a surge in sales, especially during the digital promotion period and the year-end holidays. For example, sales data from October 2024 to March 2025 show a steady and significant growth trend, from 120 bottles in October to 275 bottles in March 2025. This increase reflects the high interest of consumers in innovative chili sauce products and the effectiveness of the marketing strategies used.

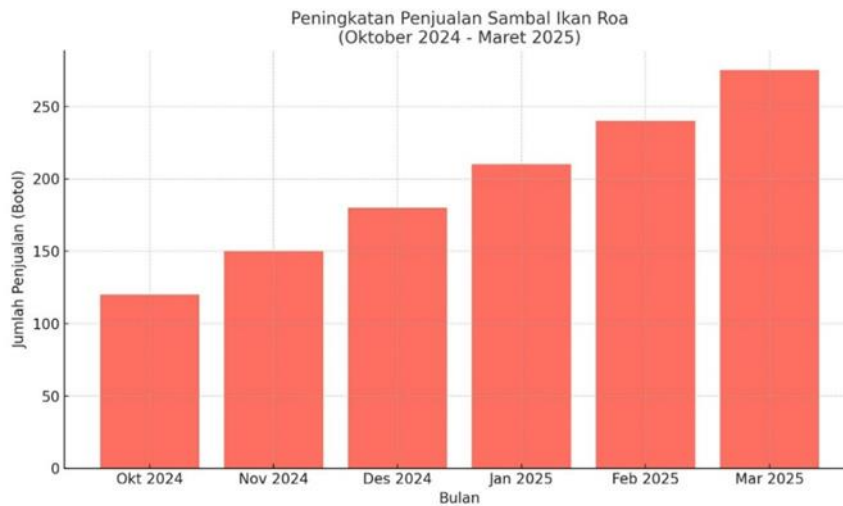


Figure 7. Increased Sales of Roa Fish Chili Sauce

In addition to increasing sales, another economic impact is the creation of new jobs in the environment around MSMEs. Many business actors recruit local workers, especially housewives and youth, to help with the production, packaging, and marketing processes. This provides additional income for families while reducing unemployment at the local level. Some MSMEs have also begun to empower local farmer partners and raw material distributors, thereby creating a mutually beneficial economic chain (Azni et al., 2021).

Socially, the presence of roa fish sauce also encourages community empowerment. MSME actors form small business communities, cooperatives, or joint production groups that share skills and experience in terms of product innovation, packaging, and promotion. Training activities such as digital marketing training, small business management, and food safety training have also begun to be held, often in collaboration with cooperative offices and community organizations (Mahendra & Utami, 2024).

Another social impact is the increasing role of women in the household economic sector. Many MSME actors are led by women, showing that this culinary innovation is also a means of gender empowerment. In addition, the involvement of the younger generation in managing social media, digital content, and product packaging design creates a dynamic young entrepreneurship ecosystem (Priyambodo & Samanhudi, 2021). Finally, roa fish sauce also plays a role in preserving the culinary culture of the archipelago by bringing the taste of Eastern Indonesia to the heart of the people of East Java, making it a symbol of cultural integration through culinary.

CONCLUSION

The innovation in processing roa fish into chili sauce by MSME actors in Sidoarjo is a form of culinary transformation that has succeeded in combining the richness of Eastern Indonesian flavors with the local tastes of the people of East Java.

This process not only produces products with unique tastes and high selling value, but also enriches local culinary treasures and strengthens cultural identity through food. The market response to roa fish sauce has been very positive, shown by the high interest of consumers and the consistent increase in sales figures over the past few months. This acceptance is influenced by product quality, attractive packaging, and effective digital marketing strategies. In addition, the presence of roa fish sauce has a significant economic impact, such as increasing MSME income, creating new jobs, and empowering community groups such as housewives and youth. Socially, this innovation also encourages collaboration between business actors and the preservation of the archipelago's culinary culture.

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