

CULINARY INNOVATION MADE FROM OYSTER MUSHROOM: THE PROCESS OF MENTORING AND NUGGET CREATION AS A BUSINESS OPPORTUNITY FOR LOCAL MSMES

Rika Febriyani¹, Hamka², Sahiruddin³

¹⁻³Economic Education Study Program, FKIP, University of Muhammadiyah Bone, South Sulawesi, Indonesia

Email: ¹anrikafebriyani75@gmail.com, ²hamka.umimks@gmail.com, ³ayiamali88cl@gmail.com

Submitted:
18 November 2025

Revised:
21 December 2025

Accepted:
17 January 2026

Abstract

Oyster mushrooms (*Pleurotus ostreatus*) are agricultural commodities with high economic value with good nutritional content. Its cultivation in Jumantoro Village, Jumapolo District, Karanganyar Regency, has great potential because it is supported by suitable natural conditions. However, farmers and MSMEs still face obstacles in the use of manual equipment and less than optimal marketing, so product innovation is needed to increase the added value and competitiveness of oyster mushrooms in the market. As a solution, a mentoring program was introduced with the culinary innovation of oyster mushroom nuggets. This activity includes surveys and interviews with MSMEs, transfer of cultivation knowledge, and production practices. Nuggets were chosen because their texture resembles chicken meat, making them an economical and healthy food alternative. Production is carried out at the MSME's Mushroom House with a systematic method to ensure quality. The results of the mentoring showed a positive response from MSMEs and the community, both in terms of economy and product acceptance. In addition to increasing local income, this program also provides direct experience for students in understanding mushroom cultivation and processing. By optimizing local potential, innovation in processed oyster mushroom products can be a sustainable strategy in supporting village economic growth.

Keywords: *Oyster Mushroom, Cultivation, UMKM, Culinary Innovation.*

1. INTRODUCTION

The oyster mushroom (*Pleurotus ostreatus*) has long been known as a cheap food source. Oyster mushrooms are not only easy to cultivate but also have many nutrients, such as protein, fiber, and various vitamins. Mushrooms are rich in nutritional content that is beneficial for the health of the people who consume them. Indonesia, with its tropical climate, has very favorable natural conditions for mushroom cultivation so that it has the potential to become a producer of edible mushrooms. Due to its fast harvest cycle and low cost, oyster mushrooms have become one of the favorite commodities of small and medium-sized farmers in recent decades[1].

However, the main problem faced by the community, including in Jumantoro Village, is the dependence on the sale of raw mushrooms, which have a low selling value and are vulnerable to market price changes. A number of innovation programs have been carried out

to increase the added value of oyster mushroom-based products as part of efforts to develop the agricultural sector and MSMEs. Various trainings and empowerment programs have been held to optimize the use of oyster mushrooms in the form of processed products with a higher selling value. Products such as mushroom chips, mushroom satay, and crispy mushrooms are some of the results of innovations that are quite popular and are often introduced in oyster mushroom-based business development programs.

Although the innovation of processed products such as chips, satay, and crispy mushrooms has been widely developed, there is still an aspect that goes unnoticed, namely the lack of diversification of products that have a wider appeal and can compete in the modern market[2]. The products mentioned earlier do have demand, but they tend to be limited to local and small-scale markets. In addition, these products are more categorized as snacks or simple side dishes, so the opportunity to be part of the main menu in people's consumption patterns is still limited.

One of the innovation opportunities that is still not widely developed is oyster mushroom nuggets. Nuggets are one of the most popular foods and have a wide market share, especially among children and families who want a practical meal[3]. So far, nuggets are better known to be made from chicken or fish, while the use of oyster mushrooms as the main ingredient in making nuggets is still very rare [4].

In fact, nuggets made from oyster mushrooms have many advantages, both in terms of health, economy, and environmental sustainability. However, nuggets made from oyster mushrooms are very unknown, especially among children and adolescents. Oyster mushroom nuggets can be a way to increase the added value of products and expand the market for oyster mushroom cultivated products. These products not only make money, but also expand the oyster mushroom market.

One potential form of diversification is oyster mushroom-based nuggets. Nuggets are practical foods that have been widely known in the community. By combining oyster mushrooms as the main ingredients, the product not only offers better nutritional value but also a unique taste appeal[5]. Unfortunately, nugget products made from oyster mushrooms are not widely known by the wider community. In this case, the people of Jumantoro Village received assistance to introduce and develop culinary innovations based on oyster mushrooms, namely nuggets. The mentoring process involves various steps, starting from identifying needs, providing instructions, and finally the direct practice of making nuggets.

2. RESEARCH METHODS

This activity was carried out in Jumantoro Village, which is one of the villages in Jumapolo District, Karanganyar Regency. This village consists of several hamlets that stretch from the south to the north. The survey was focused on Belang Hamlet by following the stages of the service implementation procedure that had been set. This activity will take place in August 2024 as part of efforts to support the empowerment of the creative economy based on local potential in Jumantoro Village. The following is an explanation of the method of assistance activities carried out: (1) Survey and interview, The initial stage in the innovation of processed oyster mushroom products is to conduct surveys and interviews with MSME owners.

From the results of the interview, it can be identified the problems faced in the cultivation and processing of oyster mushrooms today, as well as finding the right solutions to improve their quality and sustainability in the future. At this stage, the delivery also involves the transfer of knowledge about oyster mushroom cultivation by MSME owners. This activity has been carried out in the form of lectures, discussions, and question and answer sessions. The material presented focused on oyster mushroom cultivation techniques, where MSME owners provide understanding and introduce oyster mushroom cultivation methods; (2) Developing new creations in oyster mushroom processing, The second stage involves innovation practices by processing the cultivation of oyster mushrooms into processed mushroom nugget products. At this stage, research is carried out first to find the right recipe in processing oyster mushrooms, so that it can produce mushroom nuggets with a delicious taste. This process aims to develop suitable and high-quality processed products; (3) MSME assistance, The final stage involves assistance in the process of processing oyster mushrooms into mushroom nuggets. Previously, a follow-up visit had been made to the MSME Mushroom House to present the results of the innovation trial and provide training on mushroom nugget making techniques. At this stage, the team plays a role in assisting MSMEs during the mushroom nugget production process to ensure that the techniques used are in accordance with the standards that have been developed.

3. RESULTS AND DISCUSSION

The results of the study were obtained through the processing of respondent data related to the use of digital payments, financial management strategies, and financial management. This community service program was carried out through cooperation between members of the KKN Mas 2024 group and the people of Jumantoro Village, especially in Belang Hamlet, Karanganyar Regency. This village has natural conditions and resources that support the development of oyster mushroom cultivation. Local farmers use baglog as a planting medium, which is a mixture of sawdust as the main raw material. However, in the cultivation process there are still obstacles, especially in the use of equipment that is still manual and limited. Wood powder from sengon mushrooms is simply manually squeezed by hand and roasted using traditional methods, so the process is less efficient. The rapid development of agribusiness in Karanganyar Regency has made this sector one of the important pillars in Micro, Small, and Medium Enterprises (MSMEs)[6]. Oyster mushroom cultivation in Jumantoro Village not only contributes to the agricultural sector, but also opens up additional business opportunities for the local community.

It is known that the prospects for oyster mushroom cultivation are very promising, provided that the quality and quantity of the product meet the set standards. This business is also environmentally friendly because it does not cause damage to the ecosystem and can help reduce waste. Oyster mushroom growing medium is made from sawdust, which is the waste of the wood processing industry, mixed with bran as a source of nutrients, as well as lime or dolomite to adjust the pH level. Sawdust contains lignin and essential nutrients that support the growth of oyster mushrooms. The selection of wood powder as a planting medium aims

to ensure that the nutritional content can be optimally absorbed, so that the growth of oyster mushrooms becomes better.

The oyster mushroom cultivation process is carried out in one day, as it includes stages of mixing the dough, packaging, and steaming which takes about half a day. In the mixing stage, the materials that need to be prepared include sawdust, bran, and lime. All ingredients are mixed evenly, then enough water is added and stirred again. Once the mixing is complete, the dough is left overnight to allow the fermentation process.

Once the fermentation is complete, the mixture is put into plastic using a lace-up or other simple tool. After the mushroom planting medium is ready, the next step is the seeding process, which is to add mushroom seeds to the media that has been made. Cleanliness is a major factor in this stage as rooms, appliances, and workers must be in sterile conditions to prevent contamination[7]. The seeding process should be carried out in a closed space so that the results are more optimal. After the planting medium is given mushroom seeds, the surface is covered using newspaper or sterile cotton.

The next stage is the incubation process, in which the fungal mycelium is allowed to develop until it spreads and fills the entire baglog. This process generally takes about 45 days. This activity also involved students, providing a valuable opportunity to directly observe and understand the process of oyster mushroom cultivation. This hands-on experience not only enriches the insights, but also provides an in-depth understanding of the techniques and practices in mushroom farming[8].



Figure 1. Oyster mushrooms ready to harvest

Based on the results of surveys and interviews with MSME owners who run oyster mushroom cultivation, it is not only the obstacle to the use of equipment that is still manual and limited. In addition, business owners only sell crops in the form of raw oyster mushrooms to the surrounding community so that the added value of the product is still low. From these problems, the idea emerged to develop product innovations in the form of mushroom nuggets, Mushroom Nuggets are the choice for the reason that mushroom nuggets products are still very rarely sold in the market, this product is considered attractive and potentially because oyster mushrooms have a texture that resembles chicken meat, so it can be used as an alternative to meat in making nuggets. In addition, the price of oyster mushrooms is more affordable than fresh chicken meat, making it an economical choice.

Most importantly, oyster mushrooms are rich in nutrients that are beneficial for health so they are safe and good for consumption. Oyster mushrooms, which have a delicious taste and texture resembling chicken meat. Because of its distinctive taste and health benefits, oyster mushrooms are loved by many people in various parts of the world. In addition, oyster mushrooms have a fairly high protein content, which is around 17.5% to 27%, with a low fat content, ranging from 1.6% to 8%. The dietary fiber content is also quite high, which is around 8% to 11.5%. The nutritional content of oyster mushrooms is higher compared to other types of wood mushrooms. According to the Food and Drug Supervisory Agency (BPOM), functional food is a natural food ingredient, which is scientifically proven to have certain physiological functions that are beneficial to health and consumed as food should. If the function of the drug against the disease is curative, functional food can be consumed without a certain dose, can be enjoyed like food in general, as a delicious and nutritious diet or daily menu[9].

The mushroom contains 18 types of amino acids, including isoleucine, lysine, methionine, cysteine, phenylalanine, tyrosine, threonin, tryptophan, valine, arginine, histidine, alanine, aspartic acid, glutamic acid, glycine, proline, and serine. In addition, oyster mushrooms are also rich in vegetable proteins, fats, and various other important substances such as vitamins, iron, and phosphorus. Another advantage is that oyster mushrooms do not contain cholesterol, so they are a healthier food choice.

The creation of oyster mushroom nugget innovations is carried out at the Mushroom House owned by MSME owners, which is the main location in the processing process, starting from the preparation of ingredients, mixing the dough, to the packaging stage. By utilizing the available facilities, MSME owners can develop processed oyster mushroom products that are value-added, more varied, and have higher competitiveness in the market.

Oyster mushroom nuggets are processed products made from mashed oyster mushrooms, then molded into square pieces and coated with battered and breaded[10]. The main ingredients used in making these nuggets include oyster mushrooms, wheat flour, tapioca flour, breadcrumbs, eggs, garlic, salt, pepper powder, and carrots.



Figure 2. Fresh oyster mushroom sorting process

The process of making oyster mushroom nuggets begins with sorting fresh mushrooms, followed by weighing and crushing using a blender. Next, the dough is made by mixing fine oyster mushrooms, garlic, salt, pepper powder, thinly sliced carrots, wheat flour, tapioca flour, and eggs. After the dough is evenly mixed, the molding and steaming process is carried out. The steamed nuggets are then coated with eggs, smeared with breadcrumbs, then mushroom nuggets are ready to be fried and if you want to store them put in the freezer for 12 hours to maintain their texture and quality.



Figure 3. Ready-to-serve nuggets

The addition of oyster mushrooms in the manufacture of nuggets can increase the crude fiber content of the product, thus providing better health benefits[11]. In addition, the substitution of chicken meat with oyster mushrooms in nuggets has a significant effect on its organoleptic properties. Oyster mushrooms are classified as food ingredients that are safe to consume and are not toxic. Its texture and taste that resemble chicken meat make it an attractive alternative in food innovation. In addition, oyster mushrooms are a fairly high source of protein and contain various types of essential amino acids.

Its use as the main ingredient in making nuggets is supported by its abundant protein content, the availability of raw materials that are easy to obtain, and the relatively affordable price. With the high protein content of oyster mushrooms, these nuggets are an innovative product that has more nutritional value than meat-based nuggets, so it can be a healthy and nutritious food choice[12].

4. CONCLUSION

Oyster mushroom cultivation in Jumentoro Village has great potential, both economically and environmentally. Oyster mushrooms are rich in nutrients and are a healthy food choice for the community. In addition, this cultivation not only supports the agricultural sector, but also opens up new business opportunities through the processing of oyster mushroom-based products. The assistance carried out revealed the main obstacles, such as the use of manual equipment and marketing limitations. So far, oyster mushrooms have only been sold in raw form with a low selling value.

Therefore, mushroom nugget product innovations are introduced as a solution to increase added value and expand the market. Oyster mushroom nuggets were chosen because their texture resembles chicken meat and are more economical. This activity involves surveys, knowledge transfer, and direct practice in making mushroom nuggets at the Mushroom House owned by MSMEs. With a systematic production method, this product is expected to be of high quality and have a longer durability. In addition to providing economic benefits for the community, this program also has a positive impact on students involved in mentoring. This program is expected to be a model for other regions in developing local potential through oyster mushroom-based culinary innovations

5. REFERENCES

- Budiman, Y. A., Umar, A. M., Fauziah, N., & Taskirawati, I. (2023). Training on oyster mushroom cultivation in the community of Kampung Turunganseko Kera-Kera Makassar. *ABDI UNISAP: Journal of Community Service*, 1(2), 21–29. <https://doi.org/10.59632/abdiunisap.v1i2.175>
- Canti, M., Hartanti, A. T., Subali, D., Christos, R. E., Givianty, V. T., & Christina, I. (2022). Oyster mushroom cultivation training for community economic improvement. *Abdimas Galuh*, 4(2), 611. <https://doi.org/10.25157/ag.v4i2.7309>
- Fivintari, F. R., Wulandari, R., & Wijaya, O. (2021). Assistance for the development of oyster mushroom agribusiness as an effort to increase family income. *Community Empowerment*, 6(4), 641–648. <https://doi.org/10.31603/ce.4410>
- Hidayat, H., et al. (n.d.). Innovation of oyster mushroom processed products in the form of crispy mushrooms and oyster mushroom nuggets as a form of empowerment of Arumi Mushroom MSMEs in Gunung Kesiangan Village.
- Inayah, T., & Prima, E. (2022). Oyster mushroom cultivation and its processing as an effort to improve the creative economy of Beji Village. *Friday Agriculture: Journal of Community Service*, 3(2), 96–99. <https://doi.org/10.32764/abdimasper.v3i2.2881>
- Indriana, N., & Afriliyanto, A. (2022). Innovation in making oyster mushroom nuggets as an effort to recover the economy of Jampet Village residents. *AL-UMRON: Journal of Community Service*, 3(1), 59–66. <https://doi.org/10.36840/alumron.v3i1.633>
- Jannah, Z., et al. (n.d.). Digital marketing assistance for MSMEs for white oyster mushroom cultivation in Jumputrejo Village.
- Safirila, Y., Arphi, N., & Martunis, M. (2022). Chemical and sensory quality of white oyster mushroom nuggets (*Pleurotus ostreatus*) with the addition of carrots. *Scientific Journal of Agricultural Students*, 7(2), 358–365. <https://doi.org/10.17969/jimfp.v7i2.20025>
- Sanita Sari, N. W., et al. (2023). Development of processed oyster mushroom products into meatballs and nuggets as business opportunities in Lembuak Village, Narmada District. *Journal of Village Speech*, 1(4), 601–610. <https://doi.org/10.29303/witalk.v1i4.3371>

- Satria, V. Y., Anjanarko, T. S., & Wibowo, A. S. (2024). Increasing the competitiveness and sustainability of microdisurabaya businesses. *Economic Xenazation Abdi Mas*, 2(3), 21–31.
- Wariati, A., Wijayanti, A. P., & Khoiruman, M. (2018). Development and increase of added value of oyster mushroom cultivation through mushroom nugget training in Gerdu Village, Karangpandan District, Karanganyar Regency. *WASANA NYATA*, 2(2), 93–100. <https://doi.org/10.36587/wasananyata.v2i2.362>
- Zulfarina, Z., Suryawati, E., Yustina, Y., Putra, R. A., & Taufik, H. (2019). Oyster mushroom cultivation and its processing for village community independence. *Indonesian Journal of Community Engagement*, 5(3), 358. <https://doi.org/10.22146/jpkm.44054>