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IMPROVING THE KNOWLEDGE AND SKILLS OF THE MEMBERS OF THE LIMAU MANIH MUSHROOM FARMER GROUP ABOUT DIVERSIFICATION OF PROCESSED OYSTER MUSHROOM PRODUCTS

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ABSTRACT

Mushroom Cultivation is one of the government programs aimed at triggering the economy of the people who need guidance not only in the cultivation of saj, but also requires guidance for processing into more economically valuable products. Low knowledge and skills of mushroom farmers about raw materials, processing technology and product packaging. The method of activities consists of the delivery of counseling material about the nutritional content and properties of oyster mushrooms, the delivery of material about the processing technology of various oyster mushroom based products, the delivery of material about product packaging and product manufacturing practices. The results of the activity showed an increase in the knowledge and skills of oyster mushroom farmers after the extension activities. Oyster mushroom farmers who initially did not know (score 1) became little know (score 2) and knew better and were very knowledgeable about various science and technology related to raw materials, processes and products (packaging). Keywords: Oyster mushrooms, processing and packaging

INTRODUCTION

1. Background

Limau Manis Village is one of the villages located in Pauh District, Padang City. The existing topographical conditions affect the socio-economic life of the community, and the availability of land, land use in Limau Manis Village is dominated by agricultural areas (rice fields, fields). The Limau Sweet Village has a farmer group that cultivates oyster mushrooms. Mushrooms have the same properties as vegetables, which are easy to damage and rot if they are not processed quickly and appropriately. The use of fast, precise and simple technology for handling oyster mushrooms is able to increase the economic

value of farmers and can become an icon product. Diversification of food consumption based on local potential is very important in realizing rural household food security (Suyastiri, 2008).

Mushroom cultivation is one of the government programs that aims to trigger the people's economy. One of the efforts of community groups in Limau sweet that is engaged in Oyster mushroom cultivation is the Prosperous Lime Manis Group. This oyster mushroom farmer group only sells fresh mushrooms to collectors. Efforts to increase income through mushroom cultivation require processing technology to produce products that provide more added value. Farmers directly sell their harvested mushrooms in a fresh state through collectors, and then the collectors sell them to markets in the city of Padang. The nature of oyster mushrooms is easily damaged, resulting in the price of mushrooms will fall at harvest time. Therefore, a technique is needed to extend the shelf life of the product through processing Mushrooms in Limau Manis into a commercial product.

According to Cahyana and Muchrodji (1999); Martawijaya and Nurjayadi (2010), oyster mushrooms contain relatively high protein (19-35%), with complete essential amino acid content. Bernas et al. (2006) stated that the total amino acids of oyster mushrooms were present in complete amounts of 46g/100g prot, approaching the total amino acids of chicken eggs of 47.1g/100g prot so that the quality of oyster mushroom protein was close to egg protein. It was reported that the glutamic acid content in oyster mushrooms was 17.7 g/100g protein. Oyster mushroom processing technology is very developed nowadays, Nugraheni et al (2014) developed the manufacture of mushroom nuggets and chips, while mushroom-based vegetable meatballs were studied by Ahmad et al, 2018. Mushrooms can also be made into mushroom flour (Zunaidi, 2018), a natural mushroom flavoring (Prasetyaningsih et al, 2018) and mushroom burger.

The problem is that the prosperous Limau Manis mushroom farmers do not have the knowledge and skills in processing mushrooms. Therefore, activities aimed at increasing the knowledge and skills of mushroom farmer groups need to be carried out. In addition to processing oyster mushrooms, oyster mushroom farmers also need knowledge and skills about raw materials and product packaging. Knowledge of pre- packaging measures to extend product shelf life by reducing oil (Suyitni et al 1989) is very important. Furthermore, packaging is very important in maintaining product quality (Buckel et al, 1987).

2. Partner Problems

Based on a survey in the field, the Limu Manih Sejahtra oyster mushroom cultivation group experienced difficulties in selling fresh oyster mushrooms because the mushrooms were easily damaged. The characteristics of oyster mushrooms are the same as vegetables, which are quickly damaged if not handled quickly and appropriately. Therefore, we need a technology that can utilize oysters quickly, precisely and easily to apply while having an impact on increasing economic value and becoming an icon product for the people of Limau Manis.

These problems clearly appear as follows: (1) Oyster mushrooms are the same as vegetables, which are quickly damaged if they are not handled quickly and appropriately. (2) Vegetable Farmers have a very

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small share in the trade chain, selling only the fresh form to collectors. (3) Lack of knowledge for post-harvest handling of mushrooms into processed products that can improve the population's economy (4) The business of processing mushrooms produced is still very limited, mushrooms are crispy and still limited in packaging and labeling techniques and rending mushrooms have a very short shelf life (fast rancid).

Therefore, we need a technology that can utilize oysters quickly, precisely and easily applied as well as having an impact on increasing economic value. The low ability of oyster mushroom farming families and the people of Limau sweet to see business opportunities as a result of low knowledge related to processing techniques, socio-economic basics and entrepreneurship causes limitations in marketing oyster mushrooms other than selling in fresh/raw form only. These problems can be overcome by making black mushroom processed products which have the potential to be developed. Among the processed products are mushroom rendang, mushroom shredded, and mushroom nuggets. With the existence of various processed products from mushrooms in Limau Sweet Village, this will provide benefits for farming families. In addition to processing oyster mushrooms into various processed products, this activity also provides counseling about the right packaging for various products. Counseling on product labeling will also be given so that processed oyster mushroom products are in demand by the public.

3. Activity Purpose

The purpose of this activity is to help mushroom farming communities in overcoming the problems they face through: (1) Increasing knowledge of mushroom farmers about raw materials (nutritional value of oyster mushrooms) (2) Increasing oyster mushroom based (3) Increasing knowledge and skills of mushroom farmers about packaging technology , labeling and shelf life of the product. With the increasing knowledge of mushroom farmers, they will develop various processed products from mushrooms in Limau Manis Village, so that it will provide benefits for the farmer's family.

SERVICE METHOD

ACTIVITY METHOD

The method of activities for the Lecturer and Community-based Science and Technology Service Program in Limau Manis Village, Pauh District, will be carried out in the following stages:

1. The first stage: Initial Counseling of Processed Oyster Mushroom Products

Counseling on the use of processed oyster mushroom products in increasing the economic value of oyster mushrooms as a product that can be marketed commercially is carried out as an initial process to arouse the will of the community and farmers to not only focus on selling raw materials. At this stage, the service team will convey the nutritional content and benefits when consumed. In addition, an explanation was also given regarding the importance of using raw materials available in the region itself to increase food security and the family economy from available resources.

2. Second stage: Training on Processing and Packaging of Oyster Mushroom Products

This training will be taught directly to the training participants on oyster mushroom processing through a demonstration process and direct practice by the participants. Then for the packaging process,

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equipment assistance is provided followed by the practice of packaging processed oyster mushroom products produced using the tools provided. Then the correct labeling technique was also conveyed along with examples of labels that would be provided by the service team.

3. The third stage: Coaching in the Entrepreneurial Aspect

Further guidance on important aspects of entrepreneurship is also taught to equip participants. Participants are given product innovation material to foster enthusiasm and ability to open new business opportunities and capture business opportunities. Including providing an overview of product introduction techniques in the market such as participating in exhibitions, displaying products at kiosks and hotels around the city of Padang, as well as online marketing via the internet.

4. Fourth Stage: Advanced Guidance

Obstacles in the process of making processed oyster mushroom products and also in marketing their products will certainly be found in the field. Therefore, after the counseling and training process was carried out, for the following days guidance was given to participants if there were problems, so that participants were able to produce and market processed oyster mushroom products in relatively larger quantities.

This IbDM activity in Pasar Ambacang Village ended with the success of the "Processing, Packaging and Marketing of Oyster Mushroom Products" program which can be seen from the number of variants of processed oyster mushroom products and the interest of the community (KWT and IRT) to continue developing this business. Proper packaging techniques with supporting equipment are expected to be realized by the end of this program. The initial sustainability of this program is that there are marketing techniques through selling at souvenir kiosks or selling online by the community assisted by local youth.

RESULTS AND DISCUSSION

1. Increased Knowledge of Raw Materials

The results of observations on the knowledge of oyster mushroom farmers showed that all participants stated that they did not know (1.10) about the nutritional value of oyster mushrooms, even though oyster mushroom farmers had cultivated oyster mushrooms and produced them commercially. This is because oyster mushroom farmers are only given training in oyster mushroom cultivation and sell it in fresh form. So that the oyster mushroom farmers pay less attention to the nutritional value of the oyster mushrooms they have produced.

Through outreach activities, delivered by about the nutritional value of oyster mushrooms. Oyster mushrooms contain relatively high protein (19-35%), with complete essential amino acid content. Bernas et al. (2006) stated that the total amino acids of oyster mushrooms were present in complete amounts of 46g/100g prot, approaching the total amino acids of chicken eggs of 47.1g/100g prot so that the quality of oyster mushroom protein was close to egg protein. It was reported that the glutamic acid content in oyster mushrooms was 17.7 g/100g protein. After the outreach activities, oyster needle farmers got

an increase in knowledge about the nutritional value of oyster mushrooms, so that farmers knew enough (3.05) about the nutritional value of oyster mushrooms.

2. Changes in Mushroom Farmers' Knowledge of Mushroom-Based Diversification Technology

The problem with the low knowledge of mushroom farmers about mushroom-based product diversification technology is that efforts to increase this knowledge need to be carried out through extension activities. The presentation of the technology for processing mushroom nuggets and mushroom flavoring was delivered by the speaker using lecture and discussion techniques. Changes in knowledge of the technology of processing various products from oyster mushrooms, seen from the level of knowledge of oyster mushroom farmers before and after counseling about processing oyster mushrooms, how many processed products from mushrooms are known, knowledge about processing oyster mushroom rendang, knowledge about mushroom nuggets, knowledge about mushroom seasoning. To find out changes in knowledge of mushroom farmers, it was done through a questionnaire before the activity and after the activity.

Before Extension Activities

Before receiving counseling, 38.1% of participants stated that they did not know about oyster mushroom processing and 61.90% already knew about oyster mushroom processing. Participants 33.3% did not know about processing oyster mushrooms, 33.33% knew 1-2 kinds of processed products and only 4.76% knew 2-4 kinds of processed products from oyster mushrooms. Participants who know about oyster mushroom processing, 61.90 percent know about mushroom rendang processing and 31.8% do not know about oyster mushroom rendang processing. Participants who took part in the activity stated that they did not know about the processing of mushroom flavoring (90.48%) and 9.52% who knew about the processing of mushroom flavoring. 90.48 participants who took part in the activity stated that they did not know about processing mushroom nuggets, only 9.52% knew about processing mushroom nuggets. While the processing of mushroom crispy is better known to the public, compared to mushroom flavoring and nuggets. 47.62% of participants did not know about mushroom crispy processing, 28.57% knew little and 9.52% knew very much about mushroom crispy processing.

All mushroom farmers who participated in the outreach activities stated that they wanted to develop mushroom-based processed products. This is the main capital in accepting and participating in activities, it can be seen that all mushroom farmers are serious and show serious interest in the technology presented. Before the participants received counseling, they stated that mushroom processing technology was difficult (2.86), of which 28.57% of participants said it was difficult, 57.14% said it was normal and 14.29% said it was very difficult.

After Counseling Activities

The knowledge of mushroom farmers about the nutritional value of oyster mushrooms increased from a score of 1.62 (knowing little) to a score of 3.18 (knowing enough). After participating in the counseling activity: there were no (0%) mushroom farmers who did not know, 9.52% who knew little, 76.19% knew enough and 14.29% knew very well about the nutritional value of oyster mushrooms.

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This is because the extension activities are delivered in a clear and simple language, easy for mushroom farmers to understand.

Knowledge about oyster mushroom processing also increased, all knew about oyster mushroom processing, 4.76% knew little, knew enough (76.19%) and 19.06% said they knew very well about oyster mushroom processing. Knowledge of the number/variation of oyster mushroom-based products, 33.33% knew 1-2 kinds of processed products and only 4.76% knew 2-4 kinds of processed products from oyster mushrooms. Participants who took part in the training, 66.67% knew 2-4 kinds of processed products from mushrooms and 33.33% knew more than 4 kinds of processed products from mushrooms.

Knowledge about mushroom rending processing also increased, 9.52% knew little, 52.38% knew enough and 38.10% knew very well. Meanwhile, knowledge of mushroom nugget processing technology, mushroom flavoring and mushroom krispy, all participants felt that their knowledge had increased. Mushroom nugget processing technology, 9.52% know little, 76.19% know enough and 14.29% know very well. Mushroom Flavoring Processing Technology, showed that 19.05% knew little, 52.38 knew enough and
28.57% knew very well. Likewise with mushroom krispy processing technology, there was an increase.

Participants' desire to develop oyster mushroom-based products, after participating in the activity, did not seem to decrease. All still want to develop various mushroom-based products, 71.43% want to develop all products, 14.29% want to develop mushroom nuggets and 14.29% want to develop mushroom flavoring. In summary, the results of a survey on increasing knowledge of mushroom farmers after participating in extension activities can be seen in Figure 1.

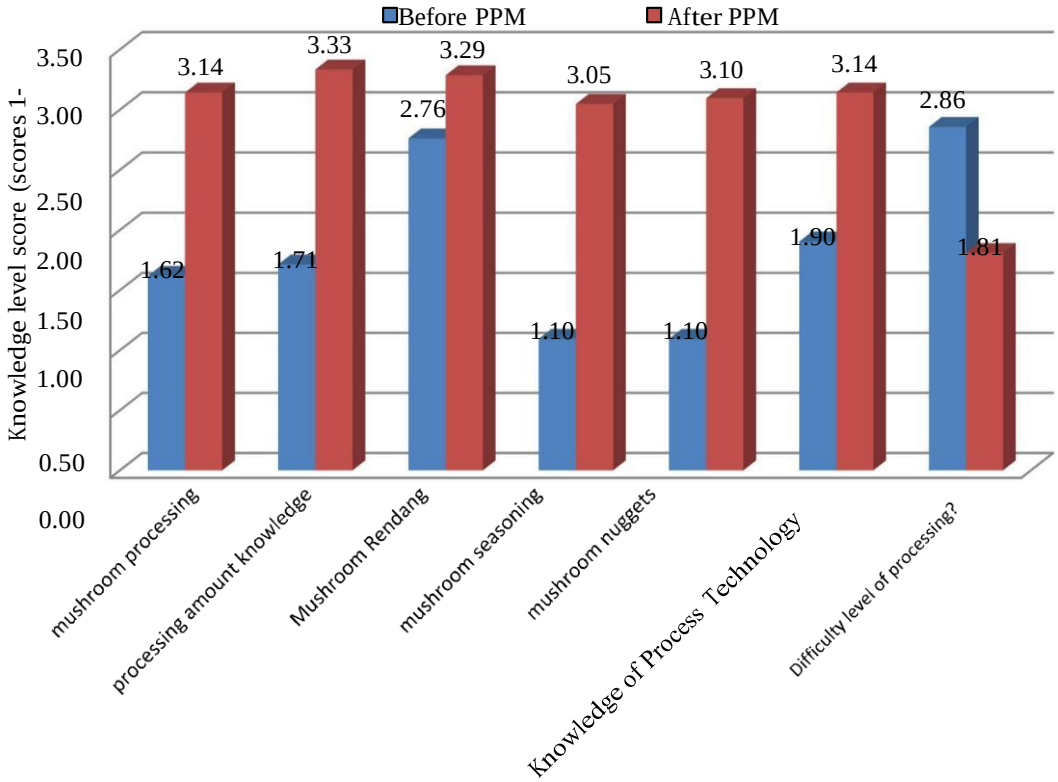


Fig. 1 Increasing Knowledge and Skills of Mushroom Farmers About Processing Technology

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3. Changes in Knowledge of Oyster Mushroom Product Packaging Technology

The problem of limited knowledge of mushroom farmers in packaging technology needs to be improved through counseling activities on Packaging Technology and packaging practices. The results of the extension activities showed that there was an increase in the knowledge of mushroom farmers about good product packaging. Mushroom farmers initially did not know the score about the shelf life of the products that have been produced (score 1.24), the shelf life of the new products, namely nuggets and flavorings (score 1.43), did not know about the packaging requirements (score 1.29), did not color and packaging design requirement (score 1.24) and packaging selection techniques (score 1.29), after attending the mushroom farmer counseling they became quite knowledgeable (score 3.24 -3.43). In full, it can be seen in Figure 2.

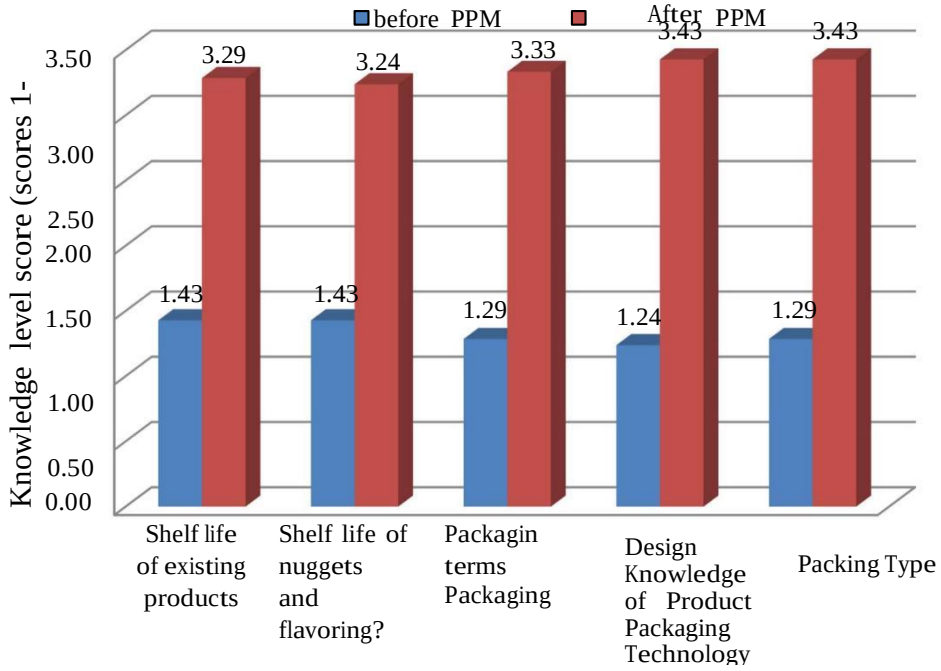


Fig. 2 Increasing Knowledge and Skills of Mushroom Farmers About Packaging Technology

The knowledge of oyster mushroom farmers about the shelf life of products that have been produced and will be produced (nuggets and natural flavorings), has increased through this activity. From not knowing to 4.76% knowing little, 61.90% knowing enough and 4.76% knowing very well. 66% knowing enough. The knowledge of oyster mushroom farmers about packaging requirements has increased to 52.38% who know enough and 42.86% know very well and only 4.76% do not know. Oyster mushroom farmers are very enthusiastic about participating in this service activity, so that their knowledge and understanding of packaging design and selection of packaging types also increases.

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CONCLUSION

The conclusion that can be conveyed is that community service activities in prosperous farmer groups have been successfully carried out with enthusiastic participants, resulting in an increase in knowledge about the nutritional value of mushrooms, processing technology and packaging technology for processed products.

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