Counselling of Traditional Tempe Manufacturers In Bakungan, Wedomartani, Ngemplak, Sleman

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Abstract. Bakungan, Wedomartani, Ngemplak, Sleman, was once famous for its traditional tempe production because there were 6 tempe manufacturers. There are currently only 2 manufacturers who still exist and are consistent with this profession. The two manufacturers are Mrs. Tukirah and Mrs. Budi Lestari. The two manufacturers carry out production processes manually and on a small scale. Therefore, assistance is needed to increase the capacity and quality of tempe products, as well as to improve the marketing system. Based on the description of the situation analysis and the partners' problems above, the solution to the problem is the mechanization of the production process (exfoliating the epidermis of soybeans with a machine and using special cookers to boil soybeans). In addition, counseling was also carried out regarding effective and efficient tempe production. Each stage of community service activities was documented in the form of photos and videos. Furthermore, the video of the activity was uploaded on the YouTube channel. The results of the community service activities were also disseminated in an international seminar. With this community service activity, partners get double benefits, namely the knowledge and technology of making tempe and obtaining quality production facilities. Thus, partners can become more independent and prosperous.

Keywords: Traditional food, tempe, UMKM

1 Introduction

Bakungan is included in the Wedomartani Village area, Ngemplak District, Sleman Regency, or just north of the Minomartani housing complex, and is about 20 km from Universitas Muhammadiyah Yogyakarta (UMY) to the northeast. From the education level point of view, main job, and social status, the population in this hamlet is very heterogeneous. The main occupations of the people in Bakungan hamlet are farmers (the majority), traders, and masons.

This hamlet used to be famous for its traditional tempe production because there were 6 tempe manufacturers. As time goes by, there are currently only 2 manufacturers who still exist and are consistent with this profession. The two manufacturers are Mrs. Tukirah and Mrs. Budi Lestari. The two manufacturers carry out production processes on a small scale and traditionally, manually, without any touch of technology at all. Their respective production capacity is in the range of 5-10 kg per day. This is because soybean prices fluctuate with a tendency to rise [1]. This is also in accordance with the prediction conveyed by Aldillah [2], that although soybean production has increased from year to year, the condition is still in deficit because the demand is greater. In addition, the marketing is also very conventional, namely only by selling around with the uncertainty of the buyer. In terms of production, they do it by soaking the soybeans, boiling the soybeans with regular cod, cleaning the soybean epidermis manually (by trampling), wrapping the soybeans in banana

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leaves, and isolating the prospective tempe with a closed basket. The conditions, situations, and process of making traditional tempe are shown in Fig. 1.

Fig. 1. The process of making traditional tempe

The main problem faced by partners is the production process which is very simple and manual, less effective and inefficient. The use of conventional soblok for boiling soybeans results in the boiling process taking a long time, the level of maturity of the soybeans is uneven, and it wastes fuel. Exfoliating soybean husk by trampling is a very tiring job. Wrapping tempe one by one in banana leaves takes a long time and is also tiring.

The solutions offered in this community service are mechanization of production in terms of boiling and peeling soybean skin, packaging diversification, and the improvement of marketing quality. In terms of packaging, two types are developed, namely packaging with plastic with a rather large size (if market demand increases so that it is necessary to increase production capacity) and individual packaging with banana leaves. There are still many people who are fanatical about tempe wrapped in banana leaves, because of its distinctive taste and aroma, as well as its antioxidant content.

2 Methodology

This Community Service Program was carried out in stages: discussions with partners, procurement of tools and materials, increasing partners' knowledge in terms of effective and efficient tempe production, preparation of activity reports, and publication. At meetings with partners, the service team explained the work plan and schedule of the entire program series, and partners provided input. The results of this discussion were used to improve the work program. Furthermore, it is necessary to procure tools and materials to support the mechanization of the production process, especially in the process of removing the soybean epidermis. In terms of increasing partners' knowledge in effective and efficient tempe production, a workshop was conducted and presented by practitioners from agribusiness companies, namely PT. Global Agro Tangguh. After that, the UMY community service team also prepared activity reports, both progress reports and final reports. In addition, the team also uploaded videos of activities on the YouTube channel and published their activities and results in an international seminar proceeding as well as online mass media.
3 Results and Discussion

3.1. Discussion With Partners
In the discussion, the team was represented by the team leader, and all partners were present. During the discussion, one of the partner's daughters was also present to accompany her mother. After discussion for about 70 minutes, it was agreed that these tempe manufacturers needed counseling in terms of mechanization of production, insights on tempe product diversification, and marketing methods. The atmosphere of the discussion is shown in Fig. 2.

![Fig. 2. Discussion between team leader and partners](image)

3.2. Enhancing Partner’s Knowledge in Effective and Efficient Tempe Production
Speakers motivated partners to continue to consistently produce and sell tempeh, even though currently the profit (net income) is very small. In addition, he also conveyed the importance of product diversification. The counseling process is shown in Figure 3.

![Fig. 3. Explanation by practician](image)

Tempe is the only fermented soybean product native to Indonesia that has several important properties, namely nutritious, palatable (delicious or tasty to eat) with a specific flavor, safe, and healthful because it contains several bioactive compounds such as isoflavones which act as antioxidants [3].
Attention should be paid to choosing the type of soybean because each type of soybean has its physicochemical characteristics and functional properties of tempe [4]. In the literature, the procedure for effective and efficient tempe production was presented by Alvida and Hamdani [5], Suknia and Rahmani [6], and Barus et al [7]. The quality of the tempe produced is expected to meet the standards of Indonesian soybean tempe as stipulated in SNI 3144:2009 [8]. The speaker also explained how the soybean skin peeler worked and provided training on how to use the tool. The soybean skin peeler used is a screw type as stated by Wisnujati [9]. Furthermore, the team provided information about the effect of the type of tempe packaging on tempe protein levels [10]. Besides that, the team also provided direction on how to sell to a wider market.


### 3.3. Handover of Community Service Grant Items

The UMY PkM team provided a grant in the form of a soybean epidermis peeler (2 units) and boiled soybean soblok (2 units) to partners. With these tools, it is hoped that the work of tempe manufacturers can become easier and the quality of tempe can be improved. The process of handing over the grant items is shown in Fig. 4. On this occasion, the community service team conveyed a message that the tools should be used and cared for properly so they are durable. On the other hand, partners represented by Mrs. Hartini expressed their sincere thanks to the team and UMY. This handover activity is documented in the form of a video and uploaded on the YouTube channel with the link: https://www.youtube.com/watch?v=Id8sLy9sTN0

![Fig. 4. Handover of Community Service Grant](image1.png)

a. Two units of soybean peeler  
b. Two units of soybean boiler

![Fig. 5. Items granted to partners](image2.png)
3.4. Explanation of The Use of Granted Items

The head of the community service team (Sudarja) explained how to use the granted tools. The donated soybean peeler is compact, has a small capacity, and has a very simple technology. This tool consists of a ¼ HP electric motor, belt, pulley, funnel, rotor, and container. The team leader explained the working principle of the tool, matters relating to hazards and risks, and how to maintain the tool. Partners paid close attention and could operate the tool properly. The process of explaining the use of the tools is shown in Figure 6. The extension activities on agricultural mechanization and the use of the donated tools are documented in video form and uploaded on the YouTube channel with the link: https://youtu.be/Dwn_rNtmXk

Fig. 6. Explanation of the use of granted items by the head of community service

4 Conclusions

From the implementation of these community service activities, it can be concluded as follows:
1. All activities have been carried out properly.
2. All partners are satisfied with the implementation of this service and express their appreciation to the team and UMY.
3. The output of this program is the transfer of knowledge which has an impact on increasing partners' understanding of matters related to tempe production technology.
4. The impact of this program is to increase the income of group members, but this cannot be measured and known at this time.
5. This PkM produces scientific publications in international seminar proceedings, publications in online mass media, and publications on the YouTube channel.

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References