

TRAINING ON THE PRODUCTION OF NATURAL DISHWASHING SOAP FOR STUDENTS AT MA MUHAMMADIYAH I MALANG

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Abstract

Based on the situation analysis and interviews with the school of MA Muhammadiyah I Malang, Tlogomas Village, Malang City, it was found that many teachers want to equip students with entrepreneurial skills, especially for those who do not continue to college. One of the potential skills to be developed is the manufacture of natural-based dish soap. Therefore, training was conducted in October 2024 to provide practical skills that can be applied in the business world. This training uses counseling and hands-on methods, where students gain knowledge and the opportunity to practice making liquid dish soap. The results of the service showed that this activity went very well and smoothly. The school welcomed this program because it is relevant to the subject of entrepreneurship. The students, both male and female, showed high enthusiasm in participating in the training. All participants attended 100%, experienced an increase in knowledge and skills, and 60% of them were interested in entrepreneurship in this field. In conclusion, the training was effective in improving students' entrepreneurship skills and it is hoped that it can be further supported with capital assistance for those who want to start a business.

Keywords: Dish soap, Natural-based, MA Muhammadiyah I, Malang

INTRODUCTION

The use of soap in daily life is common, especially because of its function as a cleaning agent. Various types of soap are available on the market in a variety of forms and formulations, such as laundry soap in cream and powder form, bath soap in solid and liquid form, hand soap in liquid form, and household cleaning soap available in cream and liquid form.

Soap is one of the primary necessities in maintaining good hygiene standards in daily life (Qudus et al., 2022). Although it is not classified as a primary necessity, dishwashing soap still plays an important role in society as it is used regularly to clean household utensils. The sustainable use of dishwashing soap requires significant costs (Amalia et al., 2018; Rery et al., 2022).

The high level of daily consumption of dishwashing soap has led to an increased demand for the product (Munawi et al., 2021). Currently, various brands of dishwashing soap are available on the market at varying prices. However, most of the products on the market still

use chemicals, which can have negative impacts on health and the environment. As public awareness of environmentally friendly products increases, there is a shift in preference toward the use of natural-based soaps.

Therefore, training in the manufacture of natural dishwashing soap has become an urgent necessity. This natural soap is made using soap nuts as the main ingredient, with water and salt added as preservatives. Through this training, it is hoped that the community will acquire the skills to produce dishwashing soap that is safer, environmentally friendly, and has the potential to be developed as an economical and sustainable alternative product.

Training in the production of natural dishwashing soap is of great significance to the students of MA Muhammadiyah I Malang. This is based on the desire of educators, both teachers and school principals, to equip students with entrepreneurial skills that can serve as a foundation after they graduate, especially for those who do not continue their education to the university level. With the skill of making liquid dishwashing soap, it is hoped that students can develop entrepreneurial abilities that contribute to enhancing economic independence.

The main ingredient in the production of liquid dishwashing soap is the soapberry fruit (*Sapindus rarak*), which is known as a natural cleanser (Ainurofiq et al., 2024). Lerak contains various active compounds, such as saponins (28%), alkaloids, polyphenols, antioxidants, flavonoids, and tannins, which provide cleaning and antibacterial properties (Kementerian Pertanian RI, 2019). In addition to being used as a soap-making ingredient, lerak also has other uses, such as a base for cosmetics, shampoo, insecticides, nematocides, and antiseptics for treating skin diseases. Furthermore, the lerak plant can serve as a landscaping plant, a shade tree, and a raw material for wood in various industrial applications.

In addition to lerak, other natural ingredients that can be used in the production of liquid dishwashing soap are lime (*Citrus aurantiifolia*) and lemon (*Citrus limon*), which serve as natural fragrances and also have antibacterial properties (Sugiyanto et al., 2024; Zuhlianty et al., 2025). However, to date, many students are still unaware of the techniques for processing these natural ingredients into dishwashing soap products. Therefore, the implementation of this training aims to enhance students' understanding and skills in processing natural ingredients into economically valuable products.

The availability of these natural ingredients in traditional markets around Dau Subdistrict, Malang Regency, which is close to MA Muhammadiyah I Malang, provides a distinct advantage in conducting this training. Students can easily obtain raw materials, so it is hoped that after the training, they will be able to produce dishwashing soap independently. By processing raw materials into dishwashing soap products, economic value will be created, employment opportunities will increase, and income-generating opportunities will arise for the processors.

Research conducted by Abdi et al. (2024) shows that community service activities have successfully improved mothers' skills in making dishwashing soap. This success is supported by the availability of easily found ingredients and relatively simple manufacturing procedures. Meanwhile, research by Epinur et al. (2024) shows that the use of dishwashing soap, hand soap, and detergents made from natural ingredients, such as betel leaves, binahong, and lime, is safer for skin health and environmentally friendly. Additionally, training in the production of natural soap plays a role in strengthening the village economy through the optimal utilization of local resources.

As an effort to equip students at MA Muhammadiyah I Malang with life skills, this community service program is very important to implement. Through this training, the school can realize its vision of equipping students with entrepreneurial skills in the field of producing natural dishwashing soap. As a result, even after graduation, students who do not pursue higher education will still have the opportunity to start their own businesses in this field. Therefore, the primary objective of this activity is to train students in the production of natural-based dishwashing soap, enabling them to acquire practical and useful skills for daily life.

IMPLEMENTATION METHOD

This activity will be held in October 2024 at MA Muhammadiyah I Malang School, located in Tlogomas Village, Lowokwaru District, Malang City, with the consideration that this school wants to equip its students with entrepreneurial skills after graduation, especially for those who do not continue their education at a university. Therefore, training and guidance in the production of liquid dishwashing soap made from natural ingredients are necessary so that they can engage in entrepreneurship in the field of natural dishwashing soap production.

Technical Service

1. Notify and request permission and instructions from the school principal so that activities can run smoothly.
2. Determine the time and place of activities with the target audience.
3. Provide assistance and training on the materials and tools prepared for making dish soap.
4. Provide assistance and training on how to make it.
5. Provide guidance and training on packaging methods.
6. Provide guidance and training on marketing methods.
7. Conduct an evaluation of the results of the outreach and training.
8. Provide solutions to problems encountered in processing and marketing.

Partner Participation

In this activity, the participation of Muhammadiyah MA I Tlogomas School, Tlogomas Village, Lowokwaru District, Malang City is as follows:

1. Providing a venue and attending training
2. Discussing the training content
3. Practicing time management during training (materials and tools provided by trainers)
4. Practicing the processing of liquid dishwashing soap made from natural ingredients.
5. Practicing packaging.
6. Practicing marketing

Evaluation Design

Table 1. Evaluation Design

Evaluation Method	Time	Criteria	Success Indicators
Activity Response	When conducting outreach and training	Attendance Rate	More than 50% of students attended the training
Knowledge	When conducting outreach and training on how to make liquid dish soap	Required tools and materials and processing procedures	More than 50% of “training participants” know the tools and materials needed and know how to make them.
Ability/Skill	When counseling and training are conducted	Processing skills	More than 50% of the “training participants” who attended were able to make and package
There are students who want to start a business making natural dish soap	One month after training	Number of students who want to start a dish soap business	More than 10% of training participants want to start a business making natural dish soap.

RESULTS AND DISCUSSION

Overview of Community Service Implementation

The community service project involving the production of natural dishwashing soap at the Muhammadiyah charitable organization, specifically at MA I Muhammadiyah Malang School, has been successfully implemented. This can be seen from the smooth execution of the project. When we arrived for coordination with the school, we were warmly welcomed because the program aligned with the school's needs. Specifically, it addressed the need for entrepreneurship education and was tailored to the entrepreneurship curriculum. As a result, the school provided us with a space and time to incorporate the entrepreneurship program into the entrepreneurship curriculum in the industrial sector. This entrepreneurship education will be implemented in the odd semester of the 2024/2025 academic year. We came for coordination again in early October 2024. We were given the time from October to December 2024. The academic year begins in early July 2024.

We carried out our community service on October 29, 2024, as requested by the school, during the entrepreneurship class. The entrepreneurship class is held on Tuesdays from 7:00 a.m. to 10:00 a.m. Therefore, we conducted the community service on Tuesday, October 29, from 7:00 a.m. to 10:00 a.m.

Ingredients and tools

1. 250 pieces of lerak as the main cleaning ingredient.
2. 2.5 liters of water.
3. 8 tablespoons of salt as a preservative.
4. 20 red frangipani flowers as a source of foam.
5. 6 limes as a fragrance ingredient.
6. 3 lemons as a fragrance ingredient.
7. 5 aloe vera leaves to maintain skin softness while washing dishes.
8. Stainless steel pot.
9. Stove for boiling.

10. Container for soap-making process.
11. Bottle as a storage container for dishwashing soap.

Natural dishwashing soap procedure

1. Soak 250 soap nuts in water for 48 hours to soften their texture and facilitate saponin extraction.
2. After soaking, rub the soap nuts to produce a solution containing saponin as a natural cleaning agent.
3. The resulting lerak solution is then boiled until it comes to a boil.
4. After boiling, 20 red hibiscus flowers are added to increase the amount of foam produced.
5. 8 tablespoons of salt are added to the solution to enhance the soap's durability for up to two months.
6. Slices of lemon from 3 lemons or slices of lime from 6 limes are added to give the dishwashing soap a fresh scent.
7. Aloe vera gel from 5 leaves is added to make the soap gentler on the hands.
8. The solution is boiled again until all ingredients are thoroughly mixed and boiling.
9. After boiling, the solution is cooled to room temperature.
10. Once the solution reaches room temperature, the soap is packaged into bottles for storage and distribution.
11. The natural dishwashing soap is ready for use or sale.

The following is documentation of the community service activities that have been carried out.



Figure 1. Introduction

Figure 1 shows the opening session of the training activity, which began with an explanation of the objectives and benefits of making natural dish soap. In this session, the presenter explained the importance of using natural ingredients as an environmentally friendly alternative and the economic potential of making soap independently. In addition, participants were given an overview of the ingredients used and the steps involved in making soap.



Figure 2. Explanation of How to Make Natural Dishwashing Soap

Figure 2 shows the presenter giving a detailed explanation of the procedure for making natural dish soap. The explanation covers the stages of soaking and processing the soap nuts, boiling, and adding additional ingredients such as frangipani, lime, lemon, and aloe vera. Participants were given the opportunity to ask questions to ensure a deeper understanding of the process.



Figure 3. Group of female students practicing making dish soap

Figure 3 shows a group of female students actively involved in the process of making dishwashing soap. They carry out various stages, from preparing the ingredients, processing the soap nuts to producing saponin extract, and mixing additional ingredients. This activity aims to provide participants with hands-on experience in practicing the knowledge that has been conveyed previously.



Figure 4. Group of male students boiling dishwashing soap ingredients to produce abundant foam

Figure 4 shows a group of male students tasked with boiling the soap ingredients. Boiling is done to extract the active ingredients from the soap nuts and ensure optimal mixing of the ingredients. This process also produces abundant foam, which is an indication of successful extraction of saponin as a natural cleaning agent.



Figure 5. Packaging soap in bottles

Figure 5 shows the final stage in soap making, namely the packaging process. Participants pour the cooled soap into bottles, ensuring that each package contains the correct amount. This activity teaches the importance of hygiene and efficiency in packaging products before they are ready for use or distribution.



Figure 6. Participants in the community service program and the soap they made, packaged in bottles

Figure 6 shows the final result of the process of making natural dishwashing soap. The soap, which has been packaged in bottles, demonstrates the participants' success in completing the training. In addition, this result can also inspire participants to develop the skills they have acquired as business opportunities or for personal use.

Results of the Service Evaluation

Based on the results of the service evaluation, it can be seen that the attendance rate of participants was 100%. The knowledge level was also 100%, and the skill level was also 100%. Meanwhile, the level of interest in becoming an entrepreneur producing natural liquid dish soap was 60%. This can be seen in Table 2.

Table 2. Evaluation Result

Evaluation	Before Training	During/After Training	Success
Activity Response (Attendance Rate)	0%	During the training, attendance was 100%. The total number of students in one class was 20, consisting of 11 boys and 9 girls, all of whom were present.	Successful. Because their attendance rate was 100%, so the attendance rate of participants was over 50% in the training.
Knowledge	Before the counseling and training, 0% of students knew about the ingredients and tools for making natural dish soap.	After receiving education and training, 100% of the students finally understood the ingredients and tools used to make natural dish soap and learned the soap-making process.	Successful due to increased knowledge. After the training, more than 50% of the "training participants" knew the tools and materials needed and how to make natural dish soap
Ability/Skill	Before the soap-	Skills in soap making	Successful. Because more

Evaluation	Before Training	During/After Training	Success
	making training was conducted, the skill level in soap-making was 0%.	have improved by 100%. Finally, everyone is skilled.	than 50% of the “training participants” who attended were able and skilled at making and packaging natural dishwashing soap.
The desire to start a business producing natural dishwashing soap	Three months after the training	The number of people who want to become entrepreneurs is 60%.	Successful. Because more than 10% of training participants want to start a business making natural dishwashing soap.

CONCLUSION

The community service program titled “Making Natural Dishwashing Soap at MA Muhammadiyah I Malang” ran very smoothly and received a positive response from the school. The activity was deemed highly relevant to the entrepreneurship curriculum, so the school fully supported its implementation. All students, both male and female, showed high enthusiasm in participating in the counseling and training. They practiced making natural dishwashing soap with enthusiasm and joy. The attendance rate reached 100%, with all participants experiencing an increase in knowledge and skills, and around 60% of them showing interest in entrepreneurship in the field of liquid soap manufacturing.

Seeing the high level of interest and entrepreneurial potential that emerged from this activity, further support is recommended, especially in the form of capital assistance. This assistance can help students who want to start a business in the field of making natural liquid dish soap, so that they can develop the skills they have acquired and apply them in the real world of business.

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