Utilization of pandan leaf and lime extract as basic ingredients in dishwashing soap production in Pundung, Bantul.

Rina Nur Rahmah[1], Aninta Surgiyan Dini[2], Muhammad Al Qadri SY Ali[3], Aldi Alfianto Putra[4], Delia Putri[5], Ledis[4], Anisa Eka Saputri[4], Okhtamia Salsabila[6], Sinta Angraeni[9], Nadya Shafira Azzahra[7], Septianto Wikan Nurhidayat[3*]

[1] Midwifery Study Program, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta
[2] Nutrition Study Program, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta
[3] Biotechnology Study Program, Faculty of Science and Technology, Universitas 'Aisyiyah Yogyakarta
[4] Nursing Study Program , Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta
[5] Communication Science Study Program, Faculty of Economics, Social Sciences and Humanities, Universitas 'Aisyiyah Yogyakarta
[6] Physiotherapy Study Program, Faculty of Health Sciences, Universitas 'Aisyiyah Yogyakarta
[7] Psychology Study Program, Faculty of Economics, Social Sciences and Humanities, Universitas 'Aisyiyah Yogyakarta
email: septiantowikannurhidayat@unisayogya.ac.id

Abstract

The Community Service Program (KKN) Regular 38 of Universitas 'Aisyiyah Yogyakarta in Pundung, Wukirsari, Imogiri, Bantul conducted an activity of producing liquid dishwashing soap made from pandan leaf extract (Pandanus amaryllifolius) and lime (Citrus aurantifolia). The purpose of this activity was to improve the community's skills in independently producing household necessities by utilizing simple and easily accessible ingredients. The soap-making process used texapon as the foaming agent, salt as the thickener, and additional pandan leaf and lime extracts that functioned as natural fragrance and antibacterial agents. The activity was conducted through demonstration, in which students performed the soap-making steps directly and engaged the community in practice. The results showed high enthusiasm from participants, and the soap product produced abundant foam, a fresh aroma, and the ability to clean grease from kitchen utensils. This activity is expected to enable the community to produce their own dishwashing soap and at the same time open opportunities for small-scale businesses with economic value.

Keywords: Utilization, Pandan Leaf, Lime, Salt, Texapon, Water

1. Introduction

The Community Service Program (KKN) is a form of community service carried out by a group of students. KKN is a compulsory subject that must be undertaken by students as one of the requirements for graduation. The purpose of the KKN program is to promote welfare, progress, and empowerment of the potential possessed by the community in a particular area (Laila, 2022).

KKN is implemented through various activities related to community service such as counseling, training, and similar activities aimed at improving skills, creativity, and knowledge of the target community (Purnamasari, 2023). The ongoing community service is part of a series of activities that must be carried out in predetermined partner villages.

KKN Group 38 from Universitas 'Aisyiyah Yogyakarta was placed in Bantul, specifically in Pundung, Wukirsari Village. Group 38 had ten work programs implemented in Pundung Hamlet, one of which was dishwashing soap production. Through this program, students provided counseling and demonstrations on how to make soap by utilizing natural ingredients found in the household environment, resulting in environmentally friendly products such as dishwashing soap made from pandan leaf and lime extracts (Arif et al., 2023).

Various brands of dishwashing soap are currently available at varying prices. However, liquid dishwashing soap is more favored than cream soap because it is more practical, dissolves quickly in water, does not leave a pungent odor on kitchen utensils, and is gentler on hands. Dishwashing soap is a daily necessity, making it important to develop innovations using natural ingredients (Fitriany et al., 2025).

One example is the use of lime (Citrus aurantifolia), which is abundant in the community but often sold cheaply during harvest seasons due to limited post-harvest processing. Lime contains saponins, flavonoids, limonene, and essential oils that serve as antibacterial agents and are effective in removing grease from kitchen utensils. Similarly, pandan plants, which are commonly found in home gardens, can be used as an additional ingredient because of their essential oils that provide a distinctive fragrance (Dewi et al., 2024).

Therefore, producing liquid dishwashing soap using lime and pandan leaves is an environmentally friendly innovation that utilizes local potential while reducing the use of synthetic chemicals (Jannah et al., 2024).

Texapon, also known as sodium lauryl sulfate (C12H25SO4Na), is a chemical derived from coconut oil that is widely used in cleaning products due to its effectiveness in removing oil and dirt. This compound is commonly a main component in liquid dishwashing soap, hand soap, shampoo, toothpaste, and body wash. It is also known for being highly biodegradable, making it environmentally friendly (Arif et al., 2023).

Salt functions as a thickening agent in liquid dishwashing soap production, where the viscosity of the product depends on the amount of salt added. The more salt used, the thicker the soap becomes. Water is used as the solvent, making the process practical and useful in daily life. Through this activity, participants were able to directly understand the soap-making process, which has several advantages: antibacterial properties, relatively low production costs, and environmental friendliness due to the use of biodegradable natural resources. The resulting dishwashing soap is not only suitable for household needs but also has the potential to be developed as a community-based small business opportunity (Purnamasari et al., 2023).

2. Method

In the implementation of dishwashing soap-making training using pandan leaf and lime extract as the main ingredients in Pundung, Imogiri, Bantul, the demonstration and practice methods were applied. The purpose of this method was to expand knowledge and skills regarding the steps of soap-making so that the audience could understand the process visually, gain clear examples of techniques, and learn the correct use of materials, tools, and procedures. The target community chosen for this training consisted of men and women in Pundung, who actively participated in the event.

Materials used for making dishwashing soap include ¼ kg of Texapon, 1 liter of water, 2 lime fruits, 9 pandan leaves, and 250 g of salt. The tools used are a bucket, gloves, a blender, a pump bottle, and a 10 cc syringe.

Procedure: The process starts by preparing all the necessary materials and tools. Then, the pandan leaves are blended together with half a small glass of water, and the mixture is filtered to get the pandan extract. The pandan extract is poured into the bucket, followed by adding the Texapon. After that, the limes are squeezed, and the juice is added into the mixture. All ingredients are stirred until well combined. Next, water is added gradually while stirring continuously until a homogeneous solution is achieved.

3. Results and Discussion

The dishwashing soap-making activity was held in Pundung RT 04 on August 21, 2025. The enthusiasm and participation of the residents were evident, with 13 participants consisting of local community members as well as the village head and his wife of Pundung, Wukirsari, Imogiri, Bantul. This activity was carried out in several stages:

3.1. Pre-Test

The activity began with a pre-test to assess the participants' initial knowledge about dishwashing soap. This pre-test served as a baseline to measure the effectiveness of the material delivery and demonstration conducted during the activity.

3.2. Material Presentation

After the pre-test, the session continued with the presentation of material explaining the benefits of making dishwashing soap and the production procedure. At this stage, participants not only received a presentation but were also given the opportunity for discussion and a Q&A session. This aimed to help

participants better understand the concepts, the materials used, and the economic opportunities from soap-making activities.

3.3. Demonstration

The core of the activity was the demonstration of making dishwashing soap, carried out by KKN students. The process started from preparing the ingredients, mixing them, and calculating production costs or the cost of goods sold (COGS). Through this demonstration, participants could directly observe and practice the correct steps of soap making.

Figure 1. demonstration of soap making frompandan leaf and lime extract

3.4. Final Stage

In the final stage, the activity included conducting a post-test to measure the participants' knowledge improvement, evaluating the activity, distributing the soap products made during the practice to all participants, and preparing the final report. The soap produced showed good quality in terms of color and solution thickness. The activity concluded with a group photo session for documentation and sharing hopes that this skill can be further developed by the community as a sustainable small business opportunity.

Figure 2. The Result of Soap Making from Pandan Leaf and Lime Extract

Figure 3. Documentation with Local Residents during the Making of Soap from Pandan Leaf and Lime Extract

4. Conclusion

The Community Service Program (KKN) Regular 38 of Universitas 'Aisyiyah Yogyakarta in Pundung Hamlet, Wukirsari, Imogiri, Bantul successfully carried out an activity of making liquid dishwashing soap from pandan leaf and lime extracts using the demonstration method. This activity improved the community's knowledge and skills in utilizing simple, easily available ingredients from the local environment, with added economic value. The results showed high community enthusiasm. The soap produced had abundant foam, a fresh aroma, and was effective in removing grease from

kitchen utensils. Through this training, the community not only met household needs independently but also gained opportunities to develop small businesses based on local potential

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