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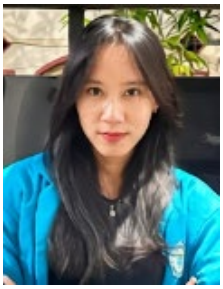

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UTILIZATION OF USED COOKING OIL WASTE FOR MAKING AROMATHERAPY CANDLES IN LIGUNG VILLAGE

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Abstract
Background. Used cooking oil is a common household waste product often discarded directly into rivers, waterways, or the soil without treatment, thereby polluting the environment. Furthermore, reusing such oil for cooking poses serious health risks. To address this issue, community-based training for housewives was held in Ligung Village, Majalengka Regency, on August 29, 2026.
Methods. The training introduced practical methods for transforming used cooking oil into aromatherapy candles. The program comprised four stages: preparation, outreach, hands-on practical guidance, and evaluation using pre-tests and post-tests. Participants learned how to filter and purify the oil using bleaching earth before mixing it with paraffin.
Result. The training deepened the participants' understanding and resulted in a tangible increase in knowledge. They also successfully produced marketable, pleasantly scented candles.
Conclusion. In addition to helping reduce environmental pollution, this initiative gave local residents an opportunity to earn extra income through a low-cost activity that other community members can easily replicate.

Keywords: Used Cooking Oil, Aromatherapy Candle, community empowerment, Environmental Education

INTRODUCTION

Cooking oil is a basic household need and is used daily in cooking. Cooking oil is a type of oil derived from plant or animal fats that have been processed and cleaned. Cooking oil in liquid form is used at room temperature to fry various types of food. Cooking oil used repeatedly by the user decreases in quality; this is called used cooking oil. Winarsih (2007) stated that fat in food should not have more than 50% acid-free fat (Armaijn et al., 2024).

Elma et al. (2016) explained that used cooking oil consists of a mixture of triglycerides and fatty acids contaminated with various substances during the frying process, such as free fatty acids, heterocyclic compounds, Maillard reaction products, and metal residues derived from food wrapping and washing processes. As a result of repeated use, unsaturated fatty acids will oxidize and form peroxide groups and cyclic monomers (Hasan et al., 2022).

Disposal of used cooking oil is often done carelessly, such as into rivers, drainage, and even directly into the soil, which can damage the environment. In addition, research conducted

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by Hadrah et. al (2018) states that consuming food fried using oil repeatedly (used cooking oil) is at risk of developing diseases such as cancer and high blood pressure (Syahidah et al., 2023).

According to Listianty et. al (2024) used cooking oil can be used to make valuable products such as aromatherapy candles (Nuni Widiarti1et al., 2026). Used cooking oil can be used as a material to make aromatherapy candles after processing. Aromatherapy candles made from natural, environmentally friendly materials help reduce environmental damage caused by used cooking oil and have potential economic value.

Through research and community service that is educocentric and focuses on community empowerment by educating and improving the community's skills in managing used cooking oil, it is expected to minimize environmental pollution caused by used cooking oil.

METHOD

This community empowerment activity was carried out in Ligung Village, Ligung District, Majalengka Regency. The activity took place on Sunday, August 29, 2026, at the Ligung Village Hall. The participants were housewives. This community empowerment activity was planned after discussions with Real Work Lecture (KKN) students, housewives, and local village officials.

The manufacture of aromatherapy candles is carried out with direct assistance, covering a full series of processes from collecting ingredients to processing used cooking oil into aromatherapy candles. This activity is carried out in several stages, as follows.

Preparation Stage

The preparation stage includes location surveys, identification of problems related to used cooking oil, as well as licensing with village officials and preparation of materials for socialization and training.

Socialization Stage

The socialization stage provides education about the dangers of used cooking oil for health and the surrounding environment. Then, providing an understanding that used cooking oil can be used by introducing the concept of processing used cooking oil into aromatherapy candles.

Training Stage

The training stage is carried out through direct assistance in making aromatherapy candles with residents and members of the Real Work Lecture (KKN). The tools used are

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stoves, gas, pots, bowls, and spoons. Meanwhile, the materials used for making aromatherapy candles include *Bleaching Earth,* which functions to clean or purify oil because it has the ability to absorb or precipitate CPO. such as heavy metals, impurities, moisture, phosphorus, β-carotene (±40%), and is able to remove aldehydes & ketones, then chlorophyll, antioxidants and gum (Budhi Rahardja et al., 2019), paraffin, *essential oils as a fragrance, wax wick, crayon,* or food coloring.

Evaluation Stage

The evaluation stage assesses how well residents understand and master the skills after completing the training, as well as gathering suggestions for the next program.

DISCUSSION

Socialization activities and training on making aromatherapy candles in Ligung Village, together with housewives who are members of the Family Welfare Empowerment group (PKK), went well and were enthusiastically received. Some residents have learned that used cooking oil can be used as the main ingredient for making aromatherapy candles and has economic value. Through socialization, Ligung Village residents who participated in the activity gained an understanding of the negative impact and the process of making used cooking oil into aromatherapy candles.

Before practicing, we conducted a pre-test and post-test with statements related to used cooking oil. For example, knowledge of the health risks of used cooking oil, the benefits of used cooking oil, that used cooking oil can be processed into aromatherapy candles, and the process of making aromatherapy candles using used cooking oil as the main ingredient.

The process of making aromatherapy candles using used cooking oil waste begins with the filtering stage. At this stage, used cooking oil is filtered first to separate the dirt and residue from the frying pan. Next, the oil is purified by heating it to about 90°C, then mixing it with 50 grams of *bleaching earth* for every 600 ml of oil. This mixture is stirred until evenly distributed, then left for a full day so that the impurities can be absorbed properly. After the settlement process is complete, the oil is filtered again to remove the bleaching earth and impurities that have been adsorbed, resulting in cleaner used cooking oil.

The next step is to mix the base wax material. The paraffin is melted first, then mixed with used cooking oil that has been purified in a 3:1 ratio (paraffin: oil). Wax paraffin is a mixture of hydrocarbons with the chemical formula C2H2N+2; the mixture of paraffin will

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form a solid wax (Budhi Rahardja et al., 2019). In this mixture, fragrance ingredients such as essential oil, telon oil, or baby oil are also added, along with wax dye as needed, then stirred until thoroughly mixed. The final step is printing, where the evenly distributed wax mixture is poured into a mold fitted with a wick and left at room temperature until it hardens into a ready-to-use aromatherapy candle. This practice produces aromatherapy candles that have a fairly dense texture, a soothing scent, and an attractive appearance due to the colors used, and are packaged in small glasses.

The advantage of making aromatherapy candles is that the raw materials are easy to obtain and inexpensive because the main ingredient comes from household waste, namely used oil or used cooking oil. The process of making aromatherapy candles using used cooking oil is easy for residents to do independently. The disadvantage is the lack of variety of aromas and packaging available during the training. Overall, this activity positively raises awareness of environmental protection, and the products produced can be a household business opportunity for residents in Limung Village.

Figure 1. The Process of Making Aromatherapy Candles by PKK Mothers accompanied by KKN Students

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Figure 2. Products Produced from Used Cooking Oil Processing

CONCLUSION

The training on making aromatherapy candles from used cooking oil in Ligung, Ligung District, Majalengka Regency aims to increase environmental awareness and the use of kitchen waste in the form of used cooking oil that has economic value. This program was well received by housewives who are members of the PKK**.** This activity has a positive impact on the community because it increases insight and awareness of the dangers and environmental concerns caused by used cooking oil. In addition, the products produced at this training open up household business opportunities. The next agenda is expected to be more interactive and attract a wider audience.

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