

Socialization and Practice of Utilizing Used Cooking Oil into Candles

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ABSTRACT

The cause of environmental pollution is used cooking oil that comes from homes. Continuous disposal of used cooking oil can have a negative impact on the environment and human life. Pa'rasangang Beru Village is a village is very suitable for farming and the need to maintain the health of the area. If the water or soil is polluted, it could have an effect on the plants planted in the area. One way to overcome this pollution is by reusing used cooking oil waste into candles. Processing used cooking oil waste into candles can reduce pollution.

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INTRODUCTION

The use of cooking oil in Indonesia is quite high due to the large number of foods that are fried, ranging from main dishes to snacks. Cooking oil used more than three times can be harmful to the body. This is because the oil deteriorates, affecting the quality and nutritional value of the fried food and potentially impacting health (Inayati and Dhanti, 2021). Consuming used cooking oil (also known as "minyak jelantah") can increase the risk of cancer, narrowing of blood vessels that can lead to hypertension, stroke, and coronary heart disease (Azizah, 2014). Improperly processed used cooking oil can also cause environmental pollution.

Used cooking oil is oil that has been used in frying processes. It can come from various types of oil used for frying, such as palm oil, corn oil, coconut oil, olive oil, and others. According to a food safety and nutrition expert from IPB (Bogor Agricultural University), Prof. Ir. Ahmad Sulaeman, MS, PhD, cooking oil should only be used up to three times (Pamujiningtyas, 2018). Used cooking oil, which is often discarded or sold illegally, can actually be repurposed into safer products. These products include converting used cooking oil into biodiesel (Adhari et al., 2016), transforming used cooking oil into soap (Prihanto and Irawan, 2018), and turning used cooking oil into aromatherapy candles (Inayati and Dhanti, 2021). Therefore, reusing used cooking oil to make candles can help reduce environmental pollution and prevent the repeated use of oil that could harm health.

LITERATURE REVIEW

The high consumption of cooking oil in Indonesia is a direct consequence of the popularity of fried foods, which are staples in daily meals, from main courses to snacks. However, the repeated use of cooking oil, specifically more than three times, poses significant health risks. Used cooking oil (minyak jelantah) contains harmful compounds that not only degrade the nutritional quality of the fried food but also affect human health. Studies show that the repeated consumption of food fried in reused oil can contribute to the risk of developing severe health conditions such as cancer, heart disease, hypertension, and stroke due to the formation of toxic substances in the oil (Inayati and Dhanti, 2021; Azizah, 2014). Moreover, improper disposal of used oil contributes to environmental pollution, which can harm both terrestrial and aquatic ecosystems, causing long-term ecological damage.

Used cooking oil is categorized as waste from the frying process, and it can be sourced from various types of oils such as palm oil, coconut oil, and others. As oil degrades with each reuse, it poses additional risks to both human health and the environment. Food safety experts, including Prof. Ir. Ahmad Sulaeman from the Bogor Agricultural Institute (IPB), have emphasized that cooking oil should only be used up to three times to ensure it does not pose health hazards (Pamujiningtyas, 2017). Beyond its negative impact, the illegal disposal or sale of used cooking oil is prevalent in some regions, highlighting the need for innovative solutions to manage this waste.

One of the most promising ways to mitigate the risks associated with used cooking oil is through its conversion into useful products. Several studies have explored the repurposing of used oil into more environmentally friendly and economically valuable products. For example, used cooking oil can be transformed into biodiesel, an alternative energy source that reduces reliance on fossil fuels and contributes to sustainable energy practices (Adhari et al., 2016). Additionally, the conversion of used cooking oil into soap is another common practice, offering a sustainable way to repurpose waste while promoting hygiene (Prihanto and Irawan, 2018). Another innovative use of used oil is its conversion into aromatherapy candles, which not only helps reduce pollution but also creates value-added products that can be used in everyday life (Inayati and Dhanti, 2021).

The repurposing of used cooking oil into candles is a particularly compelling solution because it addresses multiple issues simultaneously. By converting waste oil into candles, communities can reduce the environmental impact of improper disposal, which often leads to pollution of soil and water. Additionally, this practice helps minimize the health risks associated with the repeated use of cooking oil. Aromatherapy candles, specifically, offer a therapeutic benefit by providing relaxation and stress relief, which is beneficial in today's fast-paced society. The reuse of oil in this context also promotes sustainability by providing an alternative use for waste materials, thus contributing to a circular economy.

Several successful community-based initiatives have demonstrated the effectiveness of this practice. For example, the socialization and practical workshops held in Pa'rasangang Beru Village, South Sulawesi, have shown that local communities can actively participate in the conversion of used cooking oil into candles. These programs are structured around participatory methods, where communities learn how to make candles from waste oil, promoting both environmental awareness and practical skills (Ikram, 2025). Through such initiatives, the local population not only learns to repurpose waste oil but also gains valuable skills that can be used for income generation, further strengthening the community's resilience.

Furthermore, the success of these programs relies on collaboration between universities, local governments, and community members. For instance, the involvement of the University of Hasanuddin's students in community service programs (Kuliah Kerja Nyata) demonstrates how higher education institutions can play a key role in addressing local environmental issues. These programs help bridge the gap between theoretical knowledge and practical solutions, empowering communities to take action on environmental challenges.

In conclusion, the conversion of used cooking oil into candles offers an innovative and sustainable solution to the dual issues of health risks and environmental pollution caused by the improper disposal of waste oil. This practice not only mitigates the negative effects of oil waste but also provides economic benefits by creating marketable products. With continued efforts in education, community involvement, and collaboration between various sectors, this approach can serve as a model for other regions facing similar challenges. The future of waste oil management looks promising as more communities embrace sustainable practices and work together to create a cleaner, healthier environment.

METHOD

This study employs a participatory approach to promote the utilization of used cooking oil (minyak jelantah) as a means of reducing environmental pollution and improving community health. The program was conducted on January 31, 2025, from 10:00 to 12:00 WITA, at the Pa'rasangang Beru Village Office in the Turatea District of Jeneponto Regency, South Sulawesi. The venue was selected for its accessibility to the local community, with a focus on reaching out to village residents, especially Posyandu cadres (health volunteers), and village office staff.

The program involved a combination of socialization and hands-on practice. During the socialization session, the facilitators explained the dangers of improperly disposed used cooking oil and its potential health and environmental impacts. Participants were then introduced to the process of converting waste oil into candles, demonstrating the practicality of this solution. This provided the community with a comprehensive understanding of the issue, as well as a viable way to address it.

After the socialization, the participants engaged in a practical session, where they were taught how to make candles from used cooking oil. The necessary materials

included used cooking oil, paraffin wax, candle wicks, fragrance oils, and molds. The facilitators guided participants through each step of the process, ensuring that they understood the importance of each ingredient and its role in the candle-making process. This hands-on experience allowed the participants to replicate the process on their own, reinforcing the knowledge they gained.

The success indicators for this program were focused on the effective reduction of used cooking oil waste and the increased skill and knowledge of the participants. The primary success was measured by the amount of used cooking oil that was repurposed into candles, thereby reducing its potential environmental impact. Additionally, the participants' ability to independently make candles from waste oil was seen as a key indicator of the program's success. The program also aimed to raise awareness about the health risks of reusing cooking oil and its improper disposal. Finally, evaluation of the program was carried out through a discussion-based method, where participants shared their experiences and feedback on the activities. This allowed the facilitators to assess the participants' understanding of the process, as well as the overall effectiveness of the program. The evaluation also helped to identify areas for improvement and ensure that the program met its objectives of increasing environmental awareness and promoting sustainable practices in waste management.

RESULTS AND DISCUSSION

The practice of utilizing used cooking oil (*minyak jelantah*) into candles was successfully carried out in a structured manner, from the initial stages to the final product. The program originated from observations conducted in the Pa'rasangang Beru Village, where it was found that the community was discarding used cooking oil without any processing or reuse. Based on this observation, the program was designed to introduce a sustainable method for repurposing the waste.

The next step involved gathering the necessary materials for the project. These materials included used cooking oil, which was sourced directly from the households in the village, paraffin wax to solidify the liquid, candle wicks, and fragrance oils to give the candles a pleasant scent. Other supporting materials included glass cups for molding the candles, a stove for heating the mixture, and other basic tools required for the process. The selection of these materials was essential to ensure that the candles produced were safe and of good quality.

The socialization and practical session on transforming used cooking oil into candles was scheduled to take place on January 31, 2025, at the Pa'rasangang Beru Village Office. The session was designed to first educate the participants through socialization, where the process of making candles from used cooking oil was explained. Following the theoretical explanation, the participants were given a demonstration with pre-made samples of candles, which helped them understand the expected results and the materials required.

After the initial socialization, a hands-on practical session followed, where participants were guided through the steps of making their own candles. This practical experience was crucial for helping the community members understand how to reuse used cooking oil effectively, while also gaining knowledge of the health and environmental benefits of repurposing waste materials. The program emphasized the importance of reducing pollution and preventing the harmful effects of improper disposal of cooking oil.

Overall, the program succeeded in raising awareness about the importance of reusing waste oil and provided the community with the knowledge and skills to produce candles as an alternative use for used cooking oil. This initiative not only addressed environmental concerns but also introduced a new way to add value to waste materials,

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thereby contributing to a more sustainable and eco-friendly lifestyle in the village.



(a)



(b)



(c)



(d)

CONCLUSION

Based on the observations and the implementation of the program, it can be concluded that the repurposing of used cooking oil (minyak jelantah) into candles is an effective step in household waste management that helps reduce environmental pollution. This practice is simple to carry out, and its results are economically valuable, offering both environmental and financial benefits. Transforming waste oil into useful products like candles not only addresses the issue of pollution but also provides a sustainable way to make use of discarded materials, contributing to a cleaner and healthier environment.

We suggest that Hasanuddin University improve its supervision and support for the ongoing Kuliah Kerja Nyata (KKN) activities. Enhanced monitoring will ensure that the students' programs run smoothly and effectively, ultimately achieving the intended outcomes. Additionally, we recommend that the local government authorities provide more substantial support to ensure the smooth implementation of these programs. Greater collaboration with local government bodies will help overcome potential challenges and ensure that the initiatives are carried out successfully, benefiting both the community and the environment.

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