

CONFERENCE PROCEEDING

Organoleptic Characteristics of Handmade Dish Soap Based on Waste Cooking oil

*Afrin Fakhrun Nisa, Cantika Imarsa, Baiq Natasya Aulia Eka Putri, Intan Permata
Sari

SMA Ar-Rohmah Putri International Islamic Boarding School , Malang , Indonesia

**inhidayanti@gmail.com*

ABSTRACT

Waste cooking oil is one of the primary necessities that produced by most citizen. It is made as side product while they frying. If this side product is not appropriately recycled, it will make a harm to our environment. Some of citizen also used this kind of cooking oil many times, thus increase the chance to caught a disease such as cancer, stroke, etc. Many citizens didn't know how to deal with cooking oil waste. If we deal with this waste correctly, such as process it into a soap, we can reduce its impact as stated before. Therefore, this research aim to make a dish soap from waste cooking oil. We will purify the waste oil with banana peels. There are 3 processes that will be conducted. First is despising, second is saponification, and lastly is organoleptic test. The test will determine and evaluate the quality of the dish soap. From the test that we have done, we can conclude that the dish soap is good enough to be a product.

Keywords: *waste cooking oil, dish soap, organoleptic test.*

INTRODUCTION

Indonesia is the largest consumer of cooking oil. In 2019, national palm oil consumption reached 16,2 million kilo liters (kl). The average waste cooking oil produced is in the range of 40% - 60% or 6.46 -9.72 kl (EBTKE, 2020). Most of the waste cooking oil is not processed and has the potential as waste that can pollute the environment. Waste cooking oil also has an impact on human health. However, when the waste cooking oil is reprocessed, we can reuse them as an oil-based product such as soap. Soap that functions as a cleanser cannot be separated from human needs. Various daily activities will never be separated from soap, such as washing, bathing and others (Musliawan, 2012). Organoleptic testing is done by observing color, aroma, viscosity, impression during use, and impression after use using the senses of sight, smell, and touch (Widyasanti, *et al.*, 2020). We use organoleptic tests on this product to determine its quality.

MATERIALS AND METHODS/ METHODOLOGY

Materials and Tools

The tools that we use in this research are measuring cylinder 50 mL, measuring cylinder 500 mL, and measuring cylinder 1000mL, beaker 1000 mL, balance, stirring rod, dropping pipette, filter paper, tripod, gauze, and bunsen burner. For materials, we use banana peels, waste cooking oil, aquades, 30% KOH and 15% KOH.

Method

The methods that we use are the despicing process, the saponification process and the organoleptic test. First, the despicing process is the process of filtering waste cooking oil using banana peels that have been dried for 2-3 days and after that mix it with 15% KOH. Second, the saponification process is the process of changing waste cooking oil from the despicing process into dish soap using KOH 30% and added fragrance and dye. Third, organoleptic test by giving questionnaires and dish soap products to panelists. The panelists observed the color, smell, and tried the dish soap to determine the roughness and foam produced. Therefore, the organoleptic characteristics of dish soap made from waste cooking oil can be acquired.

RESULTS AND DISCUSSION

Despicing process

Purification is the first stage of the process of using waste cooking oil as dish soap. Its main purpose is to reduce unpleasant odors and unattractive colors. The purification of used cooking oil is done by using banana peels.

Saponification process

In this process, waste cooking oil resulting from the despicing process is mixed with 30% KOH solution for 45 minutes. The reaction (Figure 1) occurs as follows:

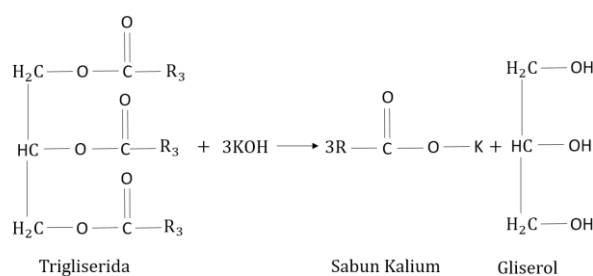


Figure 1. Reaction of Saponification process

Waste cooking oil will react with KOH to produce soap in the form of potassium salt.

Organoleptic test

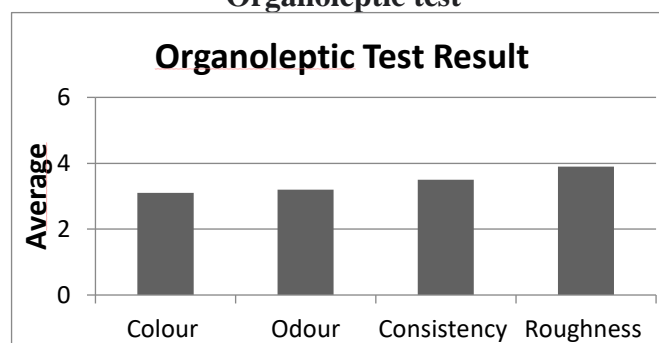


Figure 2. Organoleptic Test Results

Based on Figure 2, the color, fragrance (odour), resistance of dish soap is good, dish soap made has a better viscosity than liquid soap or dab soap as well as the tightness of soap which is almost very good, only less when the use of soap is still too slippery. The results of this organoleptic test show that dish soap from waste cooking oil has good characteristics.

Test of Durability

This test is carried out after soap have been made. The aim of this test is to determine the durability of dish soap in various aspects including the presence or absence of mildew, resistance to soap fragrance, changes in soap color, and soap foam.

Table 1. Soap durability test results for 4 weeks

Week	Soap Condition			
	The presence of fungus	Odour resistance	Colour changes	Foaming
1	Nothing	Good	Nothing	Good
2	Nothing	Good	Nothing	Good
3	Nothing	Good	Nothing	Good
4	Nothing	Good	Nothing	Good

Based on the Table 1, it can be concluded that for 4 weeks (1 month) dish soap from waste cooking oil did not experience any changes. This shows that soap can last for more than one month.

CONCLUSION

Waste cooking oil can be used as a dish soap through two processes, namely the despicings process using banana peels and the saponification process using KOH solution. Dish soap made from waste cooking oil is suitable for use in terms of organoleptic characteristics.

ACKNOWLEDGEMENT

This research is financially funded by SMA Ar-Rohmah Putri “International Islamic Boarding School” Malang-Indonesia.

REFERENCES

- EBTKE. "Minyak Jelantah: Sebuah Potensi Bisnis Energi yang Menjanjikan." Retrieved February 14, 2021 from <https://ebtke.esdm.go.id/post/2020/12/07/2725/minyak.jelantah.sebuah.potensi.bisnis.energi.yan.g.menjanjikan?lang=en>
- Musliawan, S. A. (2013). PENGGUNAAN LIMBAH KULIT PISANG SEBAGAI BAHAN CAMPURAN DALAM PEMBUATAN SABUN MANDI (Doctoral dissertation, University of Muhammadiyah Malang)
- Widyasanti, A., & Ariva, A. N. (2020). KARAKTERISTIK FISIK, KIMIA DAN ORGANOLEPTIK SABUN CAIR PENCUCI TANGAN HANDMADE BERBAHAN AMPAS SISA KOPI ESPRESSO. *AGRISAINTELIKA: Jurnal Ilmu-Ilmu Pertanian*, 4(2), 105-110