

**ANALYSIS OF MOISTURE CONTENT, PH LEVEL, PHYSICAL
CHARACTERISTICS, AND HEDONIC TESTING OF SOAP MADE FROM
COFFEE GROUNDS WASTE**

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ABSTRACT

Coffee consumption in Indonesia ranks among the highest in the world, holding the fifth position after Japan with a consumption rate of 7.39 million. As coffee consumption increases in Indonesia, the demand for coffee also rises, leading to the emergence of various brands and coffee shops. This development is accompanied by an increase in coffee waste, particularly spent coffee grounds, which are discarded at a rate of 90% without being reused. Consequently, coffee grounds become waste, prompting their utilization in soap production. This study was conducted from February to March 2024 at the Agricultural Product Processing Laboratory, Politeknik Negeri Jember. The produced soap was tested for its physical, chemical, and hedonic properties. The hedonic test results were calculated using a non-factorial Randomized Block Design (RAK) consisting of four treatments: P0 = control, P1 = 10 grams of coffee grounds, P2 = 25 grams of coffee grounds, and P3 = 50 grams of coffee grounds. The average results showed that the lowest moisture content was in the P0 treatment without coffee grounds and the P3 treatment with the addition of 50 grams of coffee grounds, although both still did not meet the SNI standard, which has a maximum moisture content of 15%. The lowest pH level was observed in the P3 treatment with the addition of 50 grams of coffee grounds, but it still exceeded the SNI limit of 9–11. The observed physical characteristics included solid form in all treatments, with the color being yellowish-white for P0, light brown for P1, brown for P2, and dark brown for P3. The texture was not scrubby in P0, slightly scrubby in P1, scrubby in P2, and very scrubby in P3. The hedonic test results revealed that Hypothesis H1 was accepted for the color parameter treatment, with P0 being the most preferred, having an average of 3.79b. The highest average aroma was observed in the P2 treatment with 3.35b, the highest average texture in the P2 treatment with 3.74c, the highest average foam amount in the P3 treatment with 3.99b, the highest average moisture in the P3 treatment with 3.93b, and the overall highest average in the P2 treatment with 3.99b. These results indicate that coffee grounds significantly affect the soap made from coffee grounds waste.

Keywords: Soap, Coffee Grounds, pH Level, Moisture Content, Hedonic Testing