

## ABSTRACT

Romero Maulana Rezacky, 24020121120002. The Effect of Using Coffee Pulp as a Substrate in Wet Fermentation on the Physicochemical and Sensory Quality of Arabica Coffee (*Coffea arabica* L.) Beans. Under the guidance of Endang Kusdiyantini and Arina Tri Lunggani

Coffee is one of the most important trading commodities in the world, and its quality is significantly influenced by post-harvest processing. Fermentation is a crucial stage that can enhance the flavor profile of coffee. This study aimed to examine the effect of varying wet fermentation times using Arabica coffee (*Coffea arabica* L.) pulp as a substrate on the physicochemical quality (moisture content, coffee extract content, ash content, and caffeine content) and organoleptic characteristics of the coffee. The research method employed wet fermentation with time variations of 24, 72, and 96 hours. The analysis of physicochemical quality referred to SNI 01-3542-2004, measured using UV-Vis Spectrophotometry. The organoleptic test was conducted using the hedonic method with 25 untrained panelists to assess attributes of aroma, flavor, aftertaste, acidity, sweetness, and mouthfeel. The results showed that the fermentation duration had a statistically significant effect on the decrease in ash content ( $p=0.004$ ), but not on the other physicochemical parameters. The moisture content of all samples (7.44%–9.08%) did not meet the SNI standard, whereas the coffee extract content and ash content did meet the standard. The measurement of caffeine content could not be definitively concluded because the caffeine results tested on the curve were below 0, yielding a "Not Detectable" (ND) result. In the organoleptic test, only the aroma attribute showed a significant difference ( $p=0.048$ ). Overall, the 24-hour fermentation treatment produced the sensory profile most favored by the panelists. It was concluded that a 24-hour fermentation duration is the optimal time to achieve the most acceptable organoleptic characteristics. For physicochemical characteristics, the fermentation duration did not have a significant effect, except on the ash content, and optimization of the drying process is needed to meet the moisture content quality standard.

Keywords: *Wet Fermentation, Arabica Coffee Beans, Coffee Quality, Organoleptic*