

***Analysis of CO and CO₂ Emission Concentrations from Combustion of
Briquettes from Corn Cob Waste and Goat Manure Consortium with Molasses
Adhesive***

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ABSTRACT

This study presents data on the results of the analysis of carbon monoxide (CO), carbon dioxide (CO₂) emission concentrations, and the CO/CO₂ ratio in the briquette combustion process. The briquettes used utilize a variety of treatments from a mixture of corncob waste and goat manure using molasses adhesive. Emission concentration testing was carried out in a room with dimensions of 3.6 m × 3 m × 2.8 m using a Portable Air Quality Detector. Data analysis was carried out by evaluating the results based on the quality standards of the Indonesian Minister of Health Regulation Number 2 of 2023, while combustion efficiency was determined by the CO/CO₂ ratio referring to the criteria of Kirumbi and King'ondeu (2016) with a threshold of <0.02. The results showed that the average CO concentration of all briquette variations was below the threshold (9 ppm), namely 2.33 ppm (VKBB3); 2.44 ppm (VKPM1); and 2.37 ppm (VUM3). The average CO₂ concentration was also below the threshold (1,000 ppm), at 541.38 ppm (VKBB3); 562.49 ppm (VKPM1); and 548.28 ppm (VUM3). The CO/CO₂ ratio for all variations was below 0.02, at 0.00430 (VKBB3); 0.00434 (VKPM1); and 0.00432 (VUM3). This indicates that the combustion process takes place efficiently and the resulting briquettes meet the technical requirements for emission quality as an environmentally friendly alternative fuel.

Keywords: *Briquette Treatment Variations, VKBB3, VKPM1, VUM3, CO and CO₂ Emission Concentrations, CO/CO₂ Ratio, Indonesian Minister of Health Regulation Number 2 of 2023*