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Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

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Abstract

This study evaluated the GHG emissions and reduction effects in three EFB treatments; the current practice of mulching (Scenario 1) and EFB ash application (Scenario 2), and the case of assumption of EFB pellets utilization as power generation fuels in Japan (Scenario 3). The result showed that, scenario 3 showed the greatest GHG emissions (471.91 kg-CO₂eq/t-EFB) followed by Scenario 1 with mulching 80 t-EFB/ha/year (16.29 kg-CO₂eq/t-EFB), Scenario 1 with mulching 40 t-EFB/ha/year (13.25 kg-CO₂eq/t-EFB), and Scenario 2 (0.8 kg-CO₂eq/t-EFB). Therefore, the efforts to the production process and power generation should be implemented as long as the EFB pellets are consumed in Japan as an effective renewable energy for GHG reduction.

Keywords: Ash, EFB, GHG, Mulching, and Cofiring.