Review of: "Valorization of palm oil wastes into oyster mushrooms (Pleurotus HK-37) and biogas production"

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Potential competing interests: No potential competing interests to declare.

The present study aims to examine the co-production of oyster mushrooms and biogas as a strategy to enhance the value of palm oil waste fractions, ultimately mitigating their environmental consequences. The research methodology employed in this study is characterized by a well-organized framework, encompassing experiments conducted on several waste fractions. The outcomes of these experiments give precise quantitative data pertaining to mushroom yield, biological efficiency, and biogas production. The results indicate that the application of oyster mushrooms as a pretreatment method for palm oil processing waste resulted in a substantial enhancement in biogas output and methane yield. This suggests that the utilization of oyster mushrooms could serve as a viable strategy for the sustainable management and utilization of palm oil waste. In order to augment the scholarly discourse, it would be advantageous to incorporate additional elucidation pertaining to the approach employed, specifically with relation to the co-production of oyster mushrooms and biogas. In order to facilitate the replication of the investigation, it would be beneficial to furnish detailed explanations outlining the systematic incorporation and enhancement of these two procedures. This would aid other researchers or practitioners who are interested in replicating the study. Furthermore, it would be advantageous to provide details regarding the experimental protocol, encompassing the duration of the tests and the specific conditions under which they were carried out, in order to provide a more thorough perspective of the study.

In addition, the study provides evidence for the feasibility of utilizing mushroom and biogas production as sustainable approaches for addressing palm oil waste fractions. However, it would be advantageous for the paper to incorporate a comprehensive analysis of the practical ramifications and potential obstacles associated with implementing these methodologies on a broader scope. This analysis should encompass factors such as commercial production and waste management, thereby enhancing the overall understanding of the subject matter. Furthermore, as recommended, it is important to perform a techno-economic study in order to determine the economic viability of this strategy. The report should address this topic as a prospective avenue for future research and advocate for additional investigations in this domain. Incorporating these elements inside the paper will enhance readers' comprehension of the wider context and practicality of the results, while also fostering further investigation and implementation within the respective discipline. In summary, this study represents a significant and noteworthy addition to the field of sustainable waste management. By offering additional methodological insights and engaging in a comprehensive analysis of practical consequences and potential avenues for future research, the study has the potential to exert a more profound influence.