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Utilizing Mahogany (Swietenia Macrophylla) Fruits, Leaves, and Branches as Biochar for Soil Amendment in Okra (Abelmoschus Esculentus) Plant

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Abstract : In this study, we delve into the application of mahogany fruits as biochar for soil amendment, aiming to evaluate their effectiveness in improving soil quality and influencing the growth parameters of okra plants through a comprehensive analysis employing various multivariate tests. In a more straightforward approach, our results show that biochar derived from isn't just a minor player but emerges as a key contributor to our study. This finding holds profound implications, as it highlights the material significance of biochar derived from Mahogany (Swietenia macrophylla) fruits, leaves, and branches in shaping the outcomes. The importance of this discovery lies in its contribution to an enhanced comprehension of the overall effects of biochar on the variables explored in our investigation. Notably, the positive changes observed in height, number of leaves, and width of leaves in okra plants further support the premise that the incorporation of biochar improves soil quality. These findings provide valuable insights for agricultural practices, suggesting that biochar derived from Mahogany (Swietenia macrophylla) fruits, leaves, and branches holds promise as a sustainable soil amendment with positive implications for plant growth. The statistical results from multivariate tests serve to solidify the conclusion that biochar plays a pivotal role in driving the observed outcomes in our study. In essence, this research not only sheds light on the potential of mahogany fruit-derived biochar but also emphasizes its significance in fostering healthier soil conditions and, consequently, enhanced plant growth.

Keywords : soil amendment, biochar, mahogany, soil health
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