

**Evaluation of Suitable Substrate(s) and Production Methods of Oyster Mushrooms  
(*Pleurotus ostreatus*) in Kisii Central District**

By

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## ABSTRACT

Oyster mushrooms (*Pleurotus ostreatus*) are an emerging crop in Kisii Central District that is of nutritional and medicinal importance. The overall objective of this study was to evaluate the suitable substrate(s) and methods of production that can be used by smallholder oyster mushroom farmers in Kisii Central District for improved production with consideration to availability and affordability. A survey was conducted on oyster mushroom farmers in Kisii Central District using a structured questionnaire; five substrates were identified as the most commonly used substrates by mushroom farmers in the district. There was no significant difference in terms of colonization between the hanging and shelf methods of oyster mushroom production. However there was very high significant difference ( $p=0.0001$ ) in quality of colonization among different substrates used. There was no significant difference ( $p=0.2293$ ) in yield between the two methods of production, however significant differences ( $p=0.0001$ ) in yield were found in five substrates used. The best substrate combination for yield production (464g) was that of banana fibres and maize stovers at 50% each. Oyster mushroom farmers can utilize either maize stovers, bean straw or banana fibres as potential individual substrates or in combinations for improved mushroom yield and quality. There is a great potential for mushroom production in Kisii Central District considering that maize, common beans and bananas are the major food crops in the district, hence maize stovers, bean straw and banana fibres are available and affordable for use as substrates.