

## **Abstract:**

This study aimed at evaluating the suitability of selected substrates for mushroom production. Ten different substrates namely water hyacinth ( *Eichhornia crassipes* ), maize cobs ( *Zea mays* ), coconut fibre ( *Cocos nucifera* ), finger millet straw ( *Seteria microcheata* ), banana fibre ( *Musa* sp.), sawdust ( *Eucalyptus* sp.), rice straw ( *Oryza sativa* ) bean straw ( *Phaseolus vulgaris* ) and wheat straw ( *Triticum aestivum* ) were tested for their suitability in mushroom production. Plastic bags were filled with 250 g of substrate and arranged in a randomized complete block design. The substrates had a significant ( $p \leq 0.05$ ) effect on days to pinning, number of caps and biological efficiency. Compared to the control, which pinned at 28 days, maize cobs, sawdust and coconut fiber had short pinning durations of 19, 22 and 23 days, respectively. With the exception of sawdust, water hyacinth and maize cobs, the rest of the organic substrates significantly increased the marketable caps of the oyster mushroom. The straws, namely, bean, rice, finger millet and wheat had the highest biological efficiency in decreasing order of 106, 92, 85 and 77%, respectively. Stipe length was longest in oyster mushroom grown on bean straw, followed by finger millet straw, maize cobs, banana fiber and shortest in sawdust. Mushroom yield was, 80, 78, 76, 73 and 68%, higher in bean straw, rice straw, millet straw, wheat straw and banana fibre treatment compared to the control. Mushroom yields on sawdust were 60% lower than the control. In descending order of suitability bean, rice, finger millet and wheat straws can be recommended for oyster mushroom production.