

Title: Isolation and Characterisation of Cellulose Degrading Fungi from Dead Wood Sediments at The University Of Embu Forest

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Abstract

Degradation of cellulose by fungi is a scientifically established phenomenon. This research a successful isolated five fungal isolates named OV1, OV2, OV3 and OV4 were obtained from dead decaying wood at the University of Embu. Samples were collected from the forest and taken to the laboratory where different tests were performed. The isolates were exposed at p.H of 3.2, 8.5, and 7.0 whereby different growth characteristics were exhibited. Temperatures of 42 °C, 10 °C and 28 °C were used in checking the degrading ability of these these isolates showed different degradation rates. Skimmed milk, citrate, starch, xylose and glycerol substrates were as well used as substrates to be utilized by this isolates. In this substrate utilization growth occurred in some and failed in other substrates. Morphological identification including mycelium color, colony characteristics and microscopic features were used when colonies were grown on PDA. Biochemical and physiological tests were as well done to differentiate between the isolates ability to degrade cellulose and the optimum conditions required for growth. of isolates.OV1 is postulated to belong to *Beauveria* spp, OV2 to *Aspergillus* spp, OV3 to *Trichoderma* spp and OV4 to *Verticillium* spp.. The research facilitated the acquisition of knowledge on the decomposition process that is aided by cellulose degrading fungi in the University of Embu forest. Therefore the knowledge obtained in understanding the degradation mechanisms and process of complex molecules (cellulose) by fungi can be applied in the management of organic wastes.