Does Oyster Mushroom Mycelium Colonize and Decompose Natural Growing Media More Quickly When Oil-based Pollutants Are Present?

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The investigation was to determine the myco-restorative properties fungal mycelium possess and the implication regarding them. Mycorestoration is the use of fungi to repair or restore the weakened immune systems of natural environments. Fungi can be utilized to restore these environments back to a healthy ecological balance after sudden toxification has occurred due to constant pollution. The experiment demonstrates how advanced mycology can be used to decontaminate polluted substrates. This shows how fungi have the ability to cleanse polluted habitats of foreign contaminants through natural metabolic processes. The Pleurotus Ostreatus species was chosen for this experiment based upon its known ability to breakdown petroleum-based pollutants; particularly polycyclic aromatic hydrocarbons found in most industrial chemicals, like diesel and pesticides. Though no industrial toxins were tested for evident safety reasons, over-the-counter coconut oil was utilized for its high lauric acid content and also being non-toxic when handled. Its usage in the cultivation of oyster mushroom mycelium, when proper procedure is followed in the sterilized work-space of a laminar flow-hood, provides a simple demonstration for the broad implications made possible with mycorestoration. When oyster mycelium was cultivated in the sterilized environment of glass canning jars, on both experimental and controlled substrates (with and without coconut oil), a definite increase in growth rate was observed of the mycelium colonies within the experimental substrate jars. These results were conclusive in showing how oyster mushroom mycelium swiftly detects, aggressively colonizes and actively degrades coconut oil-saturated substrates more quickly than a substrate without coconut oil saturation.

Awards Won: