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*Mycoremediation: Using Pleurotus ostreatus Mycelium to Remove Petroleum Hydrocarbons from Freshwater and Saltwater Environments*

If forests are planet Earth's lungs, then water is certainly planet Earth's blood. Sadly, petroleum based pollutants are poisoning our planet's waters, our planet's life blood every day. Even small amounts of petroleum can harm aquatic life and damage fragile ecosystems. The impact of regular petroleum pollution combined with oil spills is devastating. Current cleanup methods like controlled burns, skimmers, and applying chemical dispersants are generally ineffective and are often hazardous.

This project was designed to determine if *Pleurotus ostreatus* mycelium could collect petroleum hydrocarbons from saltwater and freshwater environments. I filled 6 tubs with freshwater and motor oil and 6 tubs with saltwater and motor oil and divided them into 2 groups, *Pleurotus ostreatus* (PO) and Control. In each PO tub, I floated a PO colonized strawblock. In the Control tubs I floated an uncolonized strawblock. I monitored mycelial health, water and oil levels for 63 days.

Mycelium thrived. Strawblock Oil Uptake: 13% in Freshwater-Control, 10% in Saltwater-Control; 73% in PO-Freshwater, 83% in PO-Saltwater; Water evaporated faster in PO-Group making a more hospitable underwater environment. Mass-Spectrometer data pending.

My research shows PO mycelium can collect petroleum hydrocarbons from saltwater and freshwater environments without causing further environmental harm. Fungi are the primary decomposers in most environments. Anything carbon based, including oil, can be degraded by fungi. I believe Mycoremediation is key to solving many environmental challenges. Being open to new, creative solutions can help us jump far ahead in restoring and maintaining the health of the planet.