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Mycoremediation: A Solution to Runoff Pollution?

If forests are planet Earth's lungs, then water is certainly planet Earth's blood. Sadly, pollution caused by human activity is poisoning our planet's waters, our planet's life blood every day.

As water flows across the landscape, it picks up pollutants from numerous sources. This is called Non-Point Source (NPS) pollution. NPS pollutants like oil, fertilizer and pesticides are having devastating effects on water quality.

This project was designed to determine if straw filters (commonly used along roadsides / construction zones) colonized by *Pleurotus ostreatus* (PO) could collect and neutralize common NPS pollutants.

Straw filters were made. Half colonized by PO, half un-colonized as Controls. Three polluted water samples were run through filters: fertilizer, pesticide, used motor oil. Water tests were done before and after filtration. Filters were retained 18 days post testing for pollutant exposure / neutralization evaluation. Straw, mycelium and water samples were run through a mass-spectrometer for elemental data. Experiment was replicated 3X.

Control filters had minimal effects. PO filters effectively filtered out nitrates, nitrites and heavy metals. PO filters captured 244% more oil than control filters. Mycelium showed no signs of stress under the microscope after 18 day exposure and all PO filters were producing fruiting bodies. Mass-spec data is pending.

These results show that PO colonized filters can collect and potentially neutralize common NPS pollutants. I believe Mycoremediation can help solve many environmental challenges. Being open to new, creative solutions can help us jump far ahead in restoring and maintaining the health of the planet.