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*Endocrine Disruptor Remediation in Water: Exploration of Mycoremediation Capabilities of Fungi*

Endocrine disruptors, chemicals which obstruct or imitate hormones, interfere with bodily functions. Research indicates a connection between endocrine disruptors and numerous diseases, including cancerous tumors, birth defects, developmental disorders, cognitive and brain development problems, deformations of the body, and sexual development problems. No method exists to remediate endocrine disrupting chemicals from water. Endocrine disruptors enter water systems through the release of treated wastewater into rivers and streams, eventually reaching municipal water supplies. Along the way, wildlife contacting these waters are impacted. Studies indicate that crops irrigated with endocrine disrupter contaminated water are also affected. This ongoing study explores the mycoremediation capabilities of fungi on endocrine disruptors in water. In mycoremediation fungi decompose toxins and pollutants, rendering an environment less contaminated. Fungi, as an agent of mycoremediation, is cost effective, easily introduced into a variety of ecosystems and water treatment facilities, and already present in all environments. The synthetic estrogen 17- beta ethinylestradiol was dissolved in 18 megaohm deionized water, divided into 24 samples, into 21 of which *Pluerotus ostreatus* fungi filters were placed. Three samples remained as controls. The water samples were tested utilizing a novel detection method designed specifically for this experiment. Samples were evaporated, leaving behind excess ethinylestradiol, which was added to BSTFA + 1% TCMS, a derivatization reagent in combination with a catalyst. The solution was diluted with acetonitrile, allowing it to fall within the detection limits of the Gas Chromatography- Mass Spectrometer. Testing occurred over the course of one week, allowing for metabolization of the ethinylestradiol.