Project Pestalotiopsis: Decomposition of Plastic Using Fungi

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The researchers conducted experiments using Pestalotiopsis microspora in which the researchers created a non-toxic biodegradable process of decomposing plastic for a nutrient source and re-fertilizing soil. P. microspora is a fungus that is native to the Amazon Rainforest, it grows best at 20-24 Celsius placed at 90% humidity. We used 2cc of culture for our agar plates and put 2x2 centimeter pieces of plastic placed on each petri dish quadrant. The researchers hypothesized that spores would grow and thrive using plastics as an additional nutrient source. The null hypothesis was that the spores would not grow using plastic and the plastic would look the same as when placed onto each quadrant of the agar plates. All growth areas of the plastic measured ~1mm in size. The alternate hypothesis was proven correct since over the 3 week span the culture not only grew but thrived filling the agar plate, while degrading the plastic edges which were decomposing and dissolving the plastic. This mushroom can also be grown in soil using the plastic as a nutrient to re-fertilize the soil. The culture P.microspora did grow and thrive whilst the plastic got smaller, showing holes with wavy edges where it was digested, decomposed, and reduced over the 3 week growth period.

Awards Won: