

Plastics can be degraded naturally: Fungus that Eats Plastic

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Theme: [Biotechnology and GMO](#)

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Researchers have found the first endophytic fungus that eats plastic, and can use it as its sole food source even in an oxygen-free environment. [1]

Pestalotiopsis microspora presents a massive bioremediation opportunity for landfills, where buried and surface plastics can be degraded naturally.

*More likely, though, the enzyme responsible for degrading polyurethane (PUR) will be tweaked, patented and commercialized. There will be no mad escape into urban centers where the mold will eat all our plastics, like medical scientist Kit Pedler envisioned in his sci-fi classic, *Mutant 59: The Plastic Eaters*.*

One hopes, anyway.

Dubbed the “the E. coli of temperate and tropical rainforest systems,” *P. microspora* is ubiquitous in rainforests around the world, signifying its substantial role in forest ecosystem health. [2]

It also produces taxol, a chemical used to treat breast and ovarian cancers, though the Himalayan yew is more commercially profitable for extracting it.

The PUR-degrading enzyme “is extracellular, secreted and diffusible,” said the Yale University researchers who made the discovery. The jungle fungus spits out an enzyme that diffuses to “a significant distance” from its body, expanding the potential range of cleanup.

Though touted in the media as a mushroom, *P. microspora* is actually a mold belonging to the Ascomycota phylum. Mushrooms belong to Basidiomycota. As an endophyte, it lives symbiotically within plants, whereas mushrooms tend to be ectophytes that live on plants.

Traveling to Ecuador’s rainforest as part of Yale’s annual Rainforest Expedition and Laboratory course taught by molecular biochemistry professor Scott Strobel, several students collected woody plants of various families in the Yasuni National Forest in 2008. [3]

The winning fungal isolates came from the guava tree (*Psidium guajava*) and the custard apple tree (*Annona muricata*), though several different fungal species from a variety of trees demonstrated the ability to efficiently degrade polyurethane.

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<http://www.activistpost.com/2012/02/jungle-fungus-eats-plastic-beats-cancer.html>

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