Mush-Room for Improvement

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Most current forms of radiation shielding use heavy metals, toxic chemicals, or are expensive to implement, making maintenance costly, difficult, and dangerous. However, due to recent developments in science, a cost efficient, light weight, non-toxic, radiation shielding polymer (bismuth (iii) oxide (Bi2O3)) has been discovered, as well as various species of radiotrophic fungi that utilize melanin for shielding, such as Cladosporium sphaerospemum. The purpose of the experiment was to develop a relatively cost efficient, non-toxic form of radiation shielding using Bi2O3 and C. sphaerospemum. The data showed that both the Bi2O3 and C. sphaerospemum demonstrated statistically significant shielding compared to the constants, both when recording the dose rate and radiation counts per minute. Additionally, combining the multiple layers of the two shielding mediums greatly decreased the dose rate and counts per minute, however it decreased the linear attenuation coefficient.

Awards Won: