

OFFICIAL ABSTRACT and CERTIFICATION

The Effects of Ganoderma lingzhi and Lentinula edodes on the Regeneration Rates and Longevity of Lumbriculus variegatus

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Medicinal mushrooms such as Ganoderma lingzhi (Reishi) and Lentinula edodes (Shiitake) have been reported to have numerous health benefits: lower cholesterol, stimulate the immune system, reduce inflammation and increase cellular longevity. These mushrooms have been used as remedies in traditional Chinese medicine for centuries but are not considered to be official medicinal prescriptions in western medicine. Lumbriculus variegatus was a good model organism to show the effects of these mushrooms on regeneration because the segments of the California blackworms can be regrown under normal conditions after being severed. G. lingzhi and L. edodes, purchased from a Chinese apothecary, were double extracted with 96% ethanol and spring water. Each extract was then combined in a 1:1 ratio and applied to the D. melanogaster media in culture vials, and to the culture spring water for L. variegatus in 1:100, 1:1,000, and 1:10,000 concentrations, while controls used spring water. Results thus far have shown positive correlations with both G. lingzhi and L. edodes when compared to controls.

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