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## Antifungal Protein Production from Submerged Cultures of the Medicinal Mushroom *Ganoderma Lucidum* (Curtis) P. Karst

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The Banana is a very important edible crop in the world, however it is attacked by different pathogens, one of the most prominent is the fungus *Mycosphaerella fijiensis*, causal agent of the Black Sigatoka disease. The environmental and economic issues related to the pesticides used for its control have encouraged the search for cleaner alternative biomolecules. Active proteins can act as potential antifungal agents because of their ability to degrade different compounds, which constitute essential parts of a living cell. Mushrooms represent an abundant source of active proteins, particularly the mushroom *Ganoderma lucidum*. This is a white rot basidiomycete fungus that secretes diverse hydrolytic and oxidative enzymes. In this study, protein extracts from the mushroom *G. lucidum* exhibited DNase, RNase, protease, glucanase and chitinase enzymatic activities. The extracts were fractionated and evaluated for inhibition capability against *M. fijiensis*. Mass spectrometry identification has shown the presence of different enzymes with potential antifungal capability. Besides different protein concentrations were evaluated over early stage infected banana plants, obtaining interesting results in comparison with the commercial fungicide control.