

## Determination of the Optimal Growth Conditions and Antibacterial Activity of an Australian *Ganoderma* P. Karst. Species in Liquid Culture

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*Ganoderma* P. Karst. species are one of the most widely researched mushrooms owing to their reported potent bioactive properties. Although there is much information related to American, European, and Asian isolates, little if any, research has been conducted on Australian *Ganoderma* isolates.

*Ganoderma* species may be imported into Australia only under strict quarantine conditions; therefore the isolation of a native strain that possesses bioactivity would be industrially and commercially significant. Recently three Australian *Ganoderma* species of this wood-decomposing fungus were isolated in northern Queensland. They are currently being studied to determine

their optimal growth conditions in liquid culture and to screen for their antibacterial properties.

Growth trials were performed using potato dextrose agar plates. The optimal temperature for mycelial growth was found to be 30°C for all isolates. This temperature was then used in all subsequent experiments designed to determine the optimal pH for growth in liquid culture. The extent of fungal growth was assessed by measurement of the biomass produced after a 30-day incubation period in malt extract broth (MEB) under agitated conditions. The antibacterial activity of water-extracted mycelial biomass and of the culture medium was assessed using the hole-plate diffusion method and the results are reported.