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Botanicals and Dietary Supplements

Leucopaxillus giganteus mycelium: effect of nitrogen source on organic acids and alkaloids

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In order to study the influence of four inorganic nitrogen sources (NH_4NO_3 , NaNO_2 , KNO_3 and $(\text{NH}_4)_2\text{HPO}_4$) on the chemical composition of *Leucopaxillus giganteus* mushroom mycelium, its organic acids profile was determined by HPLC-UV and total alkaloids content was assessed by a spectrophotometric method, after precipitation by Dragendorff's reagent. The results showed that *L. giganteus* presented an organic acids profile composed by oxalic, cis-aconitic, citric and fumaric acids, being citric acid the major one. The quantitative organic acids profile and total alkaloid contents were affected by the nitrogen sources and depended on the developmental stage of mycelium and nitrogen availability. Despite being present in all samples, no phenolic compound could be identified. The results obtained in this study demonstrate that mushroom mycelium could constitute a good source of healthy compounds, namely organic acids and alkaloids. *L. giganteus* mycelium is especially rich in citric acid, which presents antibacterial and antiradical properties, being very important to prevent the browning of mushroom, and to extend its shelf life. Thus, canned mycelium may not need high amounts of preservatives. Despite the analysed N sources do not provide significant differences on citric acid production, NaNO_2 will be the best choice to increase the levels of this acid. On the other hand, NaNO_2 and $(\text{NH}_4)_2\text{HPO}_4$ could be used to promote higher total alkaloids contents.

ABSTRACTS BOOK