

## Mineral and Nutritional Contents of Five Species of Wild Growing Mushrooms from South Africa

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Concentrations of As, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Pb, Se, Si and Zn were obtained from five wild growing mushrooms collected from pine plantations in the province of KwaZulu-Natal, South Africa. Currently, no reports have been published on the mineral and nutritional content of wild growing mushrooms found in South Africa. Elemental analysis was carried out using inductive coupled plasma-optical emission spectrometry (ICP-OES). The results showed elemental concentrations to be species-dependent. Each mushroom exclusively accumulated elements in the following order: *Amanita pantherina* (K>Na>Zn>Cu>Mg); *Boletus edulis* (K>Cu>Zn>Se>Na>Mg); *Boletus mirabilis* (K>Cu>Zn>Na>Mg); *Lactarius deliciosus* (K>Zn>Mg) and *Russula sardonia* (K>Na>Zn>Cu>Mg). They were however bioexclusors of all other elements (As, Be, Ca, Cd, Co, Cr, Fe, Mn, Ni, Si) studied. The fruiting bodies of the three edible mushrooms (*B. edulis*, *B. mirabilis* and *L. deliciosus*) contained the following nutrients based on dry mass: proteins (25%-55%), carbohydrates (34%-69%), Ash (3%-6.5%), moisture content (90%-92.5%) and lipid (0.8%-5.3%) in both the pileus and stipe.

Statistically significant correlation coefficients (r) were obtained for exchangeable metals in soil for Cd with Cr (0.911), Fe (0.995), Ni (0.866) and Pb (0.901); for Zn with K (0.895), Ni (0.873) and Mg (0.927); for Cr with Fe (0.921) and Se (0.912). Statistically significant correlations were also observed between Co and Cu (0.899), Fe and Pb (0.887) and K and Mg (0.908) at the 0.01 level (99% confidence interval).

### Biography:

Mr. Muvhango Rasalanavho is currently a PhD candidate at the University of KwaZulu-Natal in South Africa. He has been offering lectures at the University for the past 15 years and prior to that he was a lecturer at a teacher training college for 7 years. He obtained his BSc Honors from the University of Venda and MSc from the University of KwaZulu-Natal. In 1996 he was awarded the Fulbright Teacher Exchange Programme and spent a year teaching at Grossmont Community College in San Diego, CA. His research area is in Analytical and Environmental Chemistry.