

# Elemental Profile of *Ganoderma Brownii*

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## ABSTRACT

Mushrooms grown in natural habitats possess a very effective mechanism that enables them to accumulate metals from the ecosystem. Essential elements such as potassium, calcium, phosphorus, iron, zinc, manganese, copper, nickel and chromium play an important role in biological systems by acting as cofactors for enzyme reactions, whereas lead, cadmium, mercury and arsenic are nonessential metals that can have severe toxicological effects, even at very low levels. The essential elements can also produce toxic effect when the metal intake is excessively elevated. The purpose of the study was to determine the elemental composition in *Ganoderma brownii* collected from Uttarakhand, India by Wavelength Dispersive X-ray Fluorescence (WDXRF) Spectrometry. The calcium content was found to be higher than those of the other elements in the studied species. The concentration of rubidium in *G. brownii* was determined to be present in least amount. Recommended Dietary Allowance (RDA) and nutrient density values are found to be favorable making the use of *Ganoderma* powder in various food and pharmaceutical applications as it is an excellent source of mineral elements that are required for good health. From the comparison of the results with the defined permissible concentration limits, it has been concluded that there is no toxicological health hazard in the consumption of these mushrooms as the levels for heavy metals obtained are below the permissible limits.

**Key words:** Essential elements, heavy metals, mushrooms, Uttarakhand