

## Influence of pH value on the mineral composition of medical mushrooms

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This research aims to compare the pH values and mineral composition of three types of medicinal beech mushrooms: *Fomes fomentarius* (FF), *Ganoderma lucidum* (GL) and *Trametes versicolor* (TV). The samples were collected from the natural habitat and analyzed to determine the content of macroelements and microelements, as well as potentially toxic elements [1]. Aluminum (Al), barium (Ba), calcium (Ca), cadmium (Cd), chromium (Cr), copper (Cu), iron (Fe), mercury (Hg), potassium (K), magnesium (Mg), manganese (Mn), sodium (Na), phosphorus (P), lead (Pb), sulfur (S), selenium (Se), strontium (Sr) and zinc (Zn) were determined.

The analysis showed significant differences in the mineral composition and pH values among the examined mushroom species. *Fomes fomentarius* had high concentrations of calcium (4408±301 mg/kg) and aluminum (33.37±9.67 mg/kg), while iron was present to a lesser extent (42.03±6.93 mg/kg). *Ganoderma lucidum* had the highest content of iron (154.3±36.2 mg/kg) and sodium (60.28±9.15 mg/kg), but at the same time showed lower calcium values (2345±87.2 mg/kg) compared to the fungus *Fomes fomentarius*. *Trametes versicolor* stood out for the highest content of barium (62.03±6.13 mg/kg) and magnesium (2660±185 mg/kg), as well as elevated iron levels (122.3±98.4 mg/kg).

The pH values of the selected types of medicinal mushrooms ranged from 4.0 to 5.5, which indicates the slight acidity of the samples. *Fomes fomentarius* had the highest acidity among the analyzed species, which may affect its metabolism and biological activities. Given the different minerals present in each species, these results suggest that mineral composition and pH may have a significant impact on the nutritional and health characteristics of these mushrooms. These results contribute to a better understanding of the chemical profiles of medicinal mushrooms and can serve as a basis for future research on their application in phytotherapy and nutrition [2]. Additional research should focus on the biological activity and potential health benefits associated with established mineral profiles and pH values.

### References

[1] S.A.S. Petkovšek, B. Pokorny, *Sci. Total Environ.* **2013**, *443*, 944.

[2] S. Andres, N. Baumann, Ed 1<sup>st</sup> *Mushrooms, types, properties and nutrition*, **2012**, 129.