



# MEMORIES

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## **Ergosterol contents in mycorrhizal wild edible mushrooms: comparison by hierarchical cluster analysis**

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Sterols are important molecules of the unsaponifiable fraction in several matrices. In mushrooms, ergosterol, which is an important vitamin D<sub>2</sub> precursor, is clearly the main sterol. Hierarchical cluster analysis (HCA) is an unsupervised learning method to standardized data, checking for similarities between sample groups. This method calculates the distances (or correlation) between all samples using a defined metric such as squared Euclidean distance or Chebychev distance. Hierarchical clustering is the most common approach in which clusters are formed sequentially. The most similar objects are first grouped, and these initial groups are merged according to their similarities. Eventually as the similarity decreases all subgroups are fused into a single cluster. Herein, ergosterol was quantified by high performance liquid chromatography, coupled with an ultraviolet detector, in some of the most appreciated mycorrhizal edible mushrooms (*Amanita caesarea*, *Boletus edulis*, *Cantharellus cibarius*, *Lactarius deliciosus* and *Morchella esculenta*). Considering fat content (percentage) and ergosterol contents in mg/g fat and mg/100 g of dry weight, two main groups were formed in the HCA: one aggregating *A. caesarea* and *B. edulis* and another constituted by *C. cibarius*, *L. deliciosus* and *M. esculenta*. These two groups derived from the higher contents presented by *B. edulis* and *A. caesarea*. The detected values indicate that mushrooms might act as a potential source of this vitamin D<sub>2</sub> precursor, with special relevance for diets deprived of food products of animal origin.

**KEY WORDS:** mushrooms, ergosterol, HPLC-UV, hierarchical cluster analysis

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