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Functional constituents of three wild edible mushroom species: focus on their physicochemical, volatile profile and antimicrobial activity

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Over the last decade, the proven health-promoting abilities of different food classes, especially wild foods originated from unpolluted areas (i.e., mountains) gain the attention of consumers and food industry. It is well known that, mushrooms are consumed as a delicacy for their texture and flavor and have an important nutritional value due to their high protein, essential amino acids and fiber content but a low fat content at the same time and proved to be effective mainly as antioxidants, anticancer and antimicrobial agents. In this study, three Romanian wild edible mushroom varieties (*Boletus edulis*, *Cantharella cibarius*, *Lactarius pipperatus*) were screened regarding their physicochemical properties, volatile profile and antimicrobial activity. The nutritional value of the mushroom sample was analyzed using AOAC procedures concerning the composition in proteins (Kjeldahl method), fat (Soxhlet method), ash (calcinations method), carbohydrates and energy. The analysis of volatile compounds was carried out on a GCMS QP-2010 model gas chromatograph-mass spectrometer. Antimicrobial activity was determined using the disk diffusion test method against the following bacterial strains: *Bacillus cereus* (ATCC 11778), *Staphylococcus aureus* (ATCC 49444), *Pseudomonas aeruginosa* (ATCC 27853), *Escherichia coli* (ATCC 25922) and *Salmonella typhimurium* (ATCC 14028). According to the obtained results, the fruiting bodies of selected Romanian mushrooms are a rich source of bioactive molecules with potent *in vitro* activities. Moreover, the biological properties of the selected mushrooms indicate that they might be further exploited as functional ingredients in the composition of dietary supplement.

Biography

Melinda Fogarasi obtained her PhD in Biotechnology from the University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca (UASVM). She has four years of teaching experience while being as a PhD student and Teaching Assistant, teaching BSc level students on food quality control, animal raw materials and hygiene in food industry at the UASVM Cluj-Napoca. She has published over 50 papers in reputable journals, submitted three patent applications and was honored with the Best Poster Award as well as two diplomas of excellence and gold medal at the International Inventions Salons.

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