Event
The 2nd International Electronic Conference on Foods - "Future Foods and Food Technologies for a Sustainable World"
Session
Food Nutrition and Human Health

Submission details

Article ID
sciforum-049077
Status
abstract accepted
Title
Chemical characterization and biological activities of some wild edible mushrooms
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Abstract

Introduction: 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 fibers content but a low fat content at the same time and proved to be effective mainly as antioxidants and antimicrobial agents.

Aims: In this study, five Romanian wild edible mushrooms varieties (*A. bisporus, P. ostreatus, B. edulis, C. cibarius, L. pipperatus*) were screened regarding their physicochemical properties, volatile profile and phenolic compounds.

Materials and Methods: The nutritional value of the mushroom sample was analyzed using AOAC procedures concerning the composition in proteins, fat, ash, carbohydrates and energy. The analysis of volatile compounds was carried out on a GCMS QP-2010 model gas

chromatograph - mass spectrometer and the phenolic acids identification and quantification were done by high-performance liquid chromatography coupled with mass spectrometry (HPLC-MS).

Results: The experimental results revealed that regardless the mushrooms species, 4-Hydroxybenzoic acid and cinnamic acid were the main phenolic compound present in all selected species. The main volatile compounds identified by the gas chromatography-mass spectrometry were hexanal, benzaldehyde and dodecanoic acid.

Conclusion: According to the obtained results, the fruiting bodies of selected Romanian mushrooms are a rich source of bioactive molecules indicating that they may be further exploited as functional ingredients in the composition of innovative food products.

Acknowledgement: This work was supported by the grant of Ministry of Research and Innovation, CNCS-UEFISCDI, project number PN-III-P1-1.1-PD-2019-0475

Keywords
chemical compounds; mushrooms; phenolic compounds; volatile profile