Chemical composition and non-volatile components of three wild edible mushrooms collected from Northwest Tunisia

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Numerous species of wild growing mushrooms are widely consumed as a delicacy in Tunisia. This work aims to characterize and valorize the wild edible mushrooms of six Tunisian species, *Cantharellus cibarius, Lactarius deliciosus, Boletus edulis, Hydnum repandum, Tricholoma equestre, Agaricus campestris*, collected from different regions of Tunisia. The biochemical composition of wild mushroom species has shown that they have a low dry matter content (varies between 9 and 16%) with a high carbohydrate content (40.33 ± 0.11 and 72.24 ± 0.27% DW for *A. campestris* and *C. cibarius* species, respectively) and protein content (12.37 ± 0.11 and 37.41 ± 0.32% DW for *C. cibarius* and *A. campestris* species, respectively). Fungi are characterized by a high mineral especially, in K, Na and Mg. The lipid fraction is very low but the unsaturated fatty acids predominate on their composition because of the high contribution of linoleic acid followed by oleic acid. The determination of the sugar composition shows that trehalose and mannitol are, respectively, the major sugar and polyol of mushrooms. Moreover, the maximum trehalose and mannitol content are recorded respectively in the wild species *C. cibarius* (12.01 ± 0.91% DW) and *T. equestre* (7.99 ± 0.40% DM). Protein fraction shows a richness in essential amino acids which represents more than 50% of the total content of amino acids in the majority of species. The most abundant amino acids in all the species analyzed are leucine and phenylalanine. The ethanolic extracts from different species of wild mushrooms have considerable total phenol contents (ranging between 7.58 ± 0.08 and 9.29 ± 0.11 mg EAG / g DE) as well as appreciable levels of flavonoids (between 4.02 ± 0.08 mg and 1.29 ± 0.02 mg EQ / g DE). Measurements of antioxidant activity has shown that the extract of B. edulis is the most active using the DPPH test (0.38 ± 0.07 mg / mL).

Speaker Biography

Ibtissem Kacem Jedidi hold her Engineer diploma in Food Industries from ESIAT (High School of Food Industries of Tunisa) (2008). Her Master's and Ph.D (Food Industries) degrees from High School of Food Industries of Tunisa (2010-2018 respectively). She worked in 2009 at AGRO-FRESH industries as a quality manager (production of fully-dried semi-dried tomato: implementation of ISO 22000). She taught from 2011 to 2013 the classes of engineers, practical work of biochemistry food and microbiology food and industry, at the polytechnic central private school of the Central University of Tunisa. Her research interests included toxic wild mushrooms (master's research) and wild edible mushrooms (Ph.D research).

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