Abstract book

The eighth international workshop
on edible mycorrhizal mushrooms

IWEMM8

The sixth conference of the *Tuber aestivum/uncinatum*
European scientific group

TAUESG 6

Livre des résumés

Congrès international
sur les champignons mycorhiziens comestibles

October 10th - 17th 2016
10 -17 octobre 2016
Espace de congrès Clément-Marot
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http://www.iwemm8-cahors.com/

Topic of the congress

(Les thèmes du congrès)

1. Culture
2. Biologie
3. Ecologie
4. Taxonomie
5. Biologie moléculaire
6. Changement climatique
7. Développement de l'économie rurale
8. Mycotourisme, agritourisme et gastronomie
9. Chimie alimentaire et bénéfices sur la santé
10. Conservation et protection de l'environnement
11. Gestion des populations en milieu naturel et cultivé
12. Autres questions relatives aux champignons mycorhiziens comestibles

Scientific Committee

(Le Comité scientifique international)

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- Carolina Barroetaveña - Argentine
- Dominique Barry - France
- Gérard Chevalier - France
- Simon Egli – Suisse
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- Alexis Guerin-Laguette – Nouvelle-Zélande, Secretary general
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- Akiyoshi Yamada - Japon
- Yu Fuqiang - Chine
- Alessandra Zambonelli - Italie

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CHEMICAL CHARACTERIZATION OF FOUR WILD EDIBLE MYCORRHIZAL MUSHROOMS: THE SAME GEOGRAPHICAL ORIGIN, BUT A GREAT BIODIVERSITY

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Keywords: Wild edible mycorrhizal mushrooms, chemistry and biodiversity, bioactive compounds

The present work reports the chemical characterization of four wild edible mycorrhizal mushrooms from two different genus: *Leccinum molle* (Bon) Bon, *Leccinum vulpinum* Watling, *Suillus granulatus* (L.) Roussel and *Suillus luteus* (L.: Fries) Gray. This characterization was an attempt to find some compounds of interest, namely reducing sugars, unsaturated fatty acids, vitamin E and phenolic compounds, the two latter, known for their antioxidant capacity as scavengers of free radicals. The antioxidant potential of the species was also evaluated.

Both *Leccinum* species and the *S. granulatus* revealed the presence of the reducing sugar fructose. However, mannitol and trehalose were the main free sugars quantified in the studied samples. Unsaturated fatty acids were the predominant fatty acids class, and β- and γ-tocopherol were the main isoforms of vitamin E found in the studied species. More differences between the species were observed in the phenolic acids profiles. These compounds are known as secondary metabolites associated with stressful conditions. Therefore, since mushrooms are strongly influenced by the surrounding environment, it is natural that such differences occur, even among species of the same genus. All the species revealed antioxidant properties, being the lower EC_{50} values observed for the β-carotene bleaching inhibition.

Overall, the studied edible mycorrhizal species can be directly included in the diet in order to take advantage of the present bioactive compounds (*i.e.* vitamins, unsaturated fatty acids, reducing and/or other biologically active sugars). In addition to taking advantage of these products of the primary metabolism, it is also possible to take advantage of secondary metabolites which also possess, among others, antioxidant properties.

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