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)

- Shannon Berch - Canada
- Carolina Barroetaveña - Argentine
- Dominique Barry - France
- Gérard Chevalier - France
- Simon Egli – Suisse
- Arzu Roberto Flores - Guatemala
- Alexis Guerin-Laguette – Nouvelle-Zélande, Secretary general
- Ian Hall – Nouvelle-Zélande
- Lahsen Khabar – Maroc
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- Jesus Pérez-Moreno - Mexique
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- Daniel Mousain - France
- Claude Murat - France
- David Pilz - USA
- Jean-Marc Olivier - France
- Jean Rondet - France
- Marc-André Selosse - France
- Pierre Sourzat - France,
- Aziz Türkoğlu - Turquie
- Wang Yun - Nouvelle-Zélande, Chine
- Akiyoshi Yamada - Japon
- Yu Fuqiang - Chine
- Alessandra Zambonelli - Italie

75.	SCREENING OF ANTIOXIDANT AND ANTICHOLINESTERASE ACTIVITIES OF VARIOUS EXTRACTS FROM *Hysterangium inflatum* Rodway Meltem TAŞ, Selçuk KÜÇÜKAYDIN, Fatih ÇAYAN, Gülsen TEL ÇAYAN, Mehmet Emin DURU and Mehmet ÖZTÜRK	P	101.
76.	*Cantharellus lutescens* AND *Hydnum albidum* – POTENTIAL NEW COMMERCIAL FUNGI SPECIES IN CROATIA Željko Zgrablić1, Anton Brenko1	O	102.
77.	WHITE TRUFFLE IN CHINA: DIVERSITY AND PHYLOGENY Juan Chen, Xiao-Juan DENG, Shu-Chao LI, Pei-Gui Liu	O	103.
78.	ADVANTAGE OF MYCORRHIZED PLANTS PRODUCED IN SOILLESS CONDITIONS FOR THE OCCURRENCE OF EDIBLE FRUITING-BODIES IN PLANTATION: THE EXAMPLE OF *Lactarius deliciosus* ASSOCIATED WITH PINES Mousain Daniel, Selosse Marc-André, Geoffroy Alexandre & Guerin-Laguette Alexis	O	104.
79.	GROWING TRUFFLES IN *terra Australis* Peter P. Stahle	O	105.
80.	CULTURTRUF: A NATIONAL PROJECT AIMING AT DETERMINING THE OPTIMAL HYDRIC POTENTIAL C. Murat C, F. Lheureux, M. Tournayre	O	106.
81.	EDIBLE ECTOMYCORRHIZAL MUSHROOMS: THE NEW CALEDONIAN ORE Marc DUCOUSSO, Anne-Marie MAVIET, Philippe BOURDEAU	O	107.
82.	CONTRIBUTION OF PHENOLIC ACIDS TO THE ANTI-INFLAMMATORY ACTIVITY OF EDIBLE MYCORRHIZAL MUSHROOMS Oludemi Taofiq, Ricardo C. Calhelha, Sandrina A. Heleno, Lillian Barros, Anabela Martins, Celestino Santos-Buelga, Maria João R.P. Queiroz, Isabel C.F.R. Ferreira	O	108.
83.	ANTIOXIDANT AND ANTI-INFLAMMATORY PROPERTIES OF FUNGAL MYCELIA AND CULTURE MEDIA Fedia Souleima, Ângela Fernandes, Ricardo C. Calhelha, João C.M. Barreira, Lillian Barros, FathiaSkhiri, Anabela Martins, Isabel C.F.R. Ferreira	P	109.
84.	TAMING THE TRUFFLE (*Tuber melanosporum*). LEARNINGS FROM TRUFFLE GROWERS' PRACTICES FOR RESEARCH AND TRUFFLE PRODUCTION Aumeeruddy-Thomas, Y., Elisa Taschen, Louise Clochey et Franck Richard	O	110.
85.	MONITORING SUMMER TRUFFLES (*Tuber aestivum*) INSECTS DAMAGE Ofer Danay, Haim Reuveny, Nirit Ezov, LotemAzoulay, Yoram Luzzati, Rafi Hallel and Dan Levanon.	P	111.
86.	TRUFFLE TRAPPING: A PROMISING TECHNIQUE FOR IMPROVING PRODUCTION Murat Claude, Bonneau Lucien, De la Varga Herminia, Olivier Jean-Marc, Sandrine Fizzala, Le Tacon François	P	112.
87.	CULTIVATION OF *Tuber melanosporum* IN ABANDONED PASTURES: PERSISTENCE OF THE FUNGUS AND FREQUENCY OF THE TWO COMPATIBLE MATING TYPES Daniel Oliach; Christine R. Fischer; Carles Castaño; Francesc Bolaño; José Antonio Bonet; Carlos Colinas	O	113.

Number 83

ANTIOXIDANT AND ANTI-INFLAMMATORY PROPERTIES OF FUNGAL MYCELIA AND CULTURE MEDIA

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Keywords:*Pleurotuseryngii*, *Suillusbellinii*, ergosterol, phenolic acids, antioxidant activity, anti-inflammatory activity.

For centuries, mushrooms are used as functional foods or sources of natural medicine components.Besides the fruiting bodies, the mycelia and the culture media utilized in mushroom cultivation have been explored as potential sources of bioactive compounds, mostly due to the shorter incubation time and easier culture conditions, namely less required space, low probability of contamination and higher production of biomass, when compared to the fruiting bodies. *Pleurotus eryngii* (DC.) Quélis extensively studied and widely consumed, being acknowledged as a good dietary source of bioactive compounds. The less studied and consumed species *Suillus bellinii* (Inzenga) Watling was acknowledged for producing large amounts of biomass and exudates.

To verify potential applications of the mycelia and culture media used to grow *P. eryngii* and *S. bellinii*, the phenolic acids and ergosterol contents, as well as their antioxidant and anti-inflammatory activities, were evaluated. The obtained results were further compared to those obtained with the fruiting bodies of wild samples (collected in Bragança, Portugal, in November 2015) of the same species.The mycelia were isolated from sporocarps of each sample on different culture media (PDA,PDB and iMMN solid and liquid). Phenolic acids and ergosterol were determined by ultra-fast liquid chromatography coupled to a photodiode array detector (UFLC-PDA) or an ultraviolet detector (HPLC-UV), respectively. The antioxidant activity of the extracts was evaluated by four different assays: DPPH radical-scavenging activity, reducing power, β-carotene bleaching inhibition and thiobarbituric acid reactive substances (TBARS) assay.The anti-inflammatory effect was determined by measuring the down-regulation of NO production in LPS-stimulated RAW264.7 cells.

S. bellinii mycelia showed higher contents of ergosterol and phenolic compounds and better levels of antioxidant activity. On the other hand, *P. eryngii* mycelia, under specific culture conditions, showed higher anti-inflammatory activity (inclusively when compared to its fruiting bodies). Overall, mycelia and culture media can be use as potential alternative sources of bioactive compounds or as ingredients to be included in applications with antioxidant and anti-inflammatory activities.

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