



**MEETING GUIDE**  
**And**  
**BOOK OF ABSTRACTS**

4th Annual Meeting of the Portuguese  
Proteomics Network (ProCura)

1st Meeting of the Portuguese National  
Mass Spectrometry Network (RNEM)

10-11 November 2007  
Aveiro University  
Portugal

#### P48 - Aroma compounds in eleven edible mushroom species: Relationship between volatile profile and sensorial characteristics

P. Guedes de Pinho<sup>1</sup>, Bárbara Ribeiro<sup>1</sup>, Rui F. Gonçalves<sup>1</sup>, Paula Baptista<sup>2</sup>, Patrícia Valentão<sup>1</sup>, Rosa M. Seabra<sup>1</sup>, Paula B. Andrade<sup>1</sup>

1 REQUIMTE/Serviço de Farmacognosia, Faculdade de Farmácia da Universidade do Porto, R. Aníbal Cunha 164, 4050-047 Porto, Portugal.

2 CIMO/Escola Superior Agrária, Instituto Politécnico de Bragança, Campus de Sta Apolónia, Apartado 1172, 5301-855 Bragança, Portugal

Wild edible mushrooms are consumed a lot in many countries, being cooked or eaten in salads. Their culinary and commercial value is mainly due to their organoleptic properties, namely aroma and flavour. In addition, the aroma is very characteristic for each mushroom species, which determines the distinction between them. Despite the high consumption of mushrooms, little work is available concerning their volatile composition. Trás-os-Montes region (north-eastern Portugal) is known for the variety of its soils and diversity of climate conditions. This variability assumes an important role in mushroom production, which is why this region is recognised as one of the richest regions in wild edible species. In this work eleven wild edible mushrooms collected in this region were studied: *Suillus bellini*, *Suillus luteus*, *Suillus granulatus*, *Tricholomopsis rutilans*, *Hygrophorus agathosmus*, *Amanita rubescens*, *Russula cyanoxantha*, *Boletus edulis*, *Tricholoma equestre*, *Fistulina hepatica* and *Cantharellus cibarius*. With the exception of *B. edulis*, *F. hepatica*, *C. cibarius* and *S. luteus*, there is no knowledge of volatile characterisation of these species.

The volatile and semi-volatile constituents were determined by headspace solid-phase microextraction (HS-SPME) and by liquid extraction combined with gas chromatography-mass spectrometry (GC-MS). A total of 49 volatiles and 17 semi-volatile components were identified. Using sensorial analysis, the descriptors “mushroom-like”, “farmfeed-like”, “floral”, “honey-like”, “hay-herb” and “nutty” were obtained. The multivariate analysis (principal component analysis and agglomerative hierarchic cluster analysis) of sensorial and chemical data revealed a correlation between sensory descriptors and volatiles. The studied mushroom species can be divided in three groups: one rich in C8 derivatives, like 3-octanol, 1-octen-3-ol, *trans*-2-octen-1-ol, 3-octanone and 1-octen-3-one; another with high amounts of terpenic volatile compounds; and a third one rich in methional. The presence and contents of these compounds gives a considerable contribution to their sensory characteristics.

#### P49 - Chromatographic-based methods for pesticide determination in honey

R. Rial-Otero\*, C. Lodeiro, I. Moura, J. L. Capelo  
REQUIMTE, Departamento de Química, FCT-UNL, 2829-516 Caparica, Portugal

Nowadays the control of pesticides in honey is an issue of primary health importance as consequence of the increasing content of these chemicals in the aforementioned matrix [1, 2]. This problem has become a public health issue due to the high honey worldwide consumption. The presence of pesticides in honey has been directly related to bees' mortality by some researchers through pesticide presence in (1) pollen, (2) honeycomb walls, (3) own bees and (4) honey. In this work we describe the actual state-of-the-art for pesticides determination in honey along with a review in this subject focused on sample treatments and instrumentation.

#### Acknowledgments

R. Rial-Otero acknowledges the postdoctoral grant SFRH/BPD/23072/2005 of Science and Technological Foundation (FCT) from Portugal. We are indebted to Science and Technological Foundation (FCT)/FEDER (Portugal/EU) (Project POCI/QUI/55519/2004 FCT-FEDER).

[1] R. Rial-Otero, E.M. Gaspar, I. Moura, J.L. Capelo. *Talanta* 71 (2007) 503–514.

[2] R. Rial-Otero, E.M. Gaspar, I. Moura, J.L. Capelo. *Talanta* 71 (2007) 1906–1914.