

11^o CONGRESSO
NACIONAL
DE CROMATOGRAFIA

20 anos
CROMATOGRAFIA

11th NATIONAL MEETING ON CHROMATOGRAPHY

9 | 11 Dezembro 2019
Caparica | Portugal



Faculdade de Ciências e Tecnologia,
Universidade NOVA de Lisboa



Title

11th National Chromatography Meeting

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SCIENTIFIC AND SOCIAL PROGRAM

SATURDAY, DECEMBER 7

09:00 Short courses registration and FCT NOVA

1. *Sample preparation methods for chromatographic analysis. 9:30 to 12:30*
Eduardo Mateus, Resolution Lab, CENSE-FCT-NOVA, Portugal
2. *MS hyphenation with LC and GC. 14:30 to 17:30*
Marco Gomes da Silva, Resolution Lab, LAQV-FCT NOVA, Portugal
3. *Validation of Chromatographic Methods. 14:30 to 17:30*
Alice Mosca – AIM, Portugal and Ricardo Bettencourt Silva – FCUL, Portugal

SUNDAY, DECEMBER 8

4. *Comprehensive gas chromatography – GC x GC. 9:30 to 12:30*
Philip Marriott, School of Chemistry, Faculty of Science at Monash University – Australia
5. *HPLC. 14:30 to 17:30*
Marco Gomes da Silva, Resolution Lab, LAQV-FCT NOVA, - Portugal

WEDNESDAY, DECEMBER 11

6. *Large-scale efficient extraction of chemical information from untargeted chemical profiling (GC/MS) data. 14:30 to 17:30*
Rasmus Bro, Copenhagen University, Faculty of Sciences – Denmark

P10 Effects of calcium silicate on the chemical and bioactive composition of *Pleurotus ostreatus* var. Florida

Rossana V. C. Cardoso^{1,2}, Márcio Carochó¹, Ângela Fernandes¹, Diego Cunha Zied³, João C.M. Barreira¹, Ana M. González-Paramás², Lillian Barros¹, Isabel C.F.R. Ferreira^{1,*}

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Mushrooms are low-calorie foods with good quality proteins, vitamins and minerals, besides holding potential for some medicinal applications. In fact, mushrooms could be a source of many different nutraceuticals such as steroids, phenolic compounds, and others. Thus, they might be used directly in diet and promote health, taking advantage of the additive and synergistic effects of all the bioactive compounds present¹.

The edible mushroom *Pleurotus ostreatus* var. Florida known as "Hiratake" is one of the most consumed mushrooms in the world², mainly due its easy cultivation, economic potential, nutritional quality, as well as therapeutic and biological properties. Silicon (Si) is known to play an important role in the mineral nutrition supplementation of mushrooms and plants, including increased productivity, through the availability of nutrients, increased biomass and resistance to biotic and abiotic stresses³. In this study, cultivated *Pleurotus ostreatus* var. Florida was supplemented with calcium silicate (0.5, 1, 2 and 4 %) and the effects of this supplementation on chemical and bioactive composition were evaluated. Ergosterol and vitamin D2 were determined by high performance liquid chromatography coupled to a UV detector; organic acids and phenolic compounds were determined by ultrafast liquid chromatography coupled to a photodiode array detector⁴.

The supplementation with calcium silicate exerted remarkably positive effects in the evaluated parameters. Specifically, higher vitamin D2 contents were obtained in samples treated with 1% and 2% (866 and 862 µg/100 g dw). A similar increase was obtained in organic acids (5.15 g/100 g dw), considering the three identified compounds (oxalic, malic and fumaric acids) in samples treated with 0.5% of calcium silicate. The calcium silicate supplementation also increased the total phenolic compounds (protocatechuic acid, *p*-coumaric acid and cinnamic acid) relatively to the control sample.

Calcium silicate supplementation was effective in improving the chemical profiles of *P. ostreatus*. Therefore, this practice may represent an effective way to increase the compounds of interest in different mushrooms.

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