5th Portuguese Young Chemists Meeting

(5th PYCheM)

&

1st European Young Chemists Meeting

(1st EYCheM)

Centro Cultural Vila Flor

Guimarães, Portugal

26th – 29th of April

ICVS/3B's

Câmara Municipal de Guimarães

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General Programme

	26 April	27 April	28 April	29 April
9:00-13:20	Registration and Workshop of Open Science and European Open Access Policies in H2020	Organic Chemistry and Medicinal Chemistry	Inorganic, Physical, Analytical and Electrochemistry	Materials Chemistry and Nanomaterials and Surface Chemistry
13:30	Opening Ceremony	Lunch	Lunch	Lunch
14:00 - 18:00	Green Chemistry + Chemistry of Natural Products	Biochemistry and Medicinal Chemistry	CHEM2NATURE Symposium: Chemical strategies for modification of natural origin materials Assembleia GQJ (17h)	Materials Chemistry and Nanomaterials and Surface Chemistry
18:00		Walking Tour		Closing Ceremony
19:00	Welcome Cocktail		Gala Dinner	
21:30	Get-together night			

P1. Chemical composition of *Boletus pinophilus* and *Clitocybe subconnexa*: Preservation with gamma irradiation

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The short shelf life of mushrooms is a barrier for their distribution and, therefore, there has been extensive research to find technologies that ensure the preservation of mushrooms, maintaining their organoleptic and nutritional properties [1]. Irradiation has proved its technological feasibility to be safely used in the reduction of food losses, being recognized by international organizations as a valid conservation alternative in extending shelf life of many foods. The aim of the present work was to validate the use of 2 kGy dose of gamma radiation to maintain chemical composition of wild mushrooms. *Boletus pinophilus* Pilát & Dermek and *Clitocybe subconnexa* Murrill wild samples were obtained in Trás-os-Montes; subsequently, the samples were divided in two groups: control (non-irradiated, 0 kGy) and irradiated (2 kGy). The irradiation of the samples was performed in a ^{60}Co experimental chamber. Moisture, protein, fat, carbohydrates and ash were determined following the standard procedures [2]. Free sugars and tocopherols were determined by high performance liquid chromatography coupled to a refraction index detector (HPLC-RI) and a fluorescence detector, respectively; fatty acids were determined by gas-liquid chromatography with flame ionization detection (GC-FID) [3]. The protein and ash content was preserved in both groups, although the sugars and tocopherols decreased in the irradiated samples. Sugars and fatty acids showed significant changes after irradiation treatment, particularly in *B. pinophillus*, nevertheless, the magnitude of the obtained differences did not seem to be sufficient to affect the chemical profiles of the assayed mushrooms.
Overall, the detected chemical changes might be considered as allowable, in view of the high advantages offered by gamma irradiation at decontamination and/or disinfestation level.

References

[1] Lacroix, M.; Ouattara, B., Food Res Int 2000, 33, 719-724
[2] AOAC, 1995, 16th Ed. Arlington VA, USA: Association of Official Analytical Chemists.
[3] Fernandes, Â., Barreira, J. C. M.; Antonio, A. L.; Oliveira, M. B. P. P.; Martins, A.; Ferreira, I. C. F. R. 2015, LWT - Food Sci Technol (*in press*).

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