SOCIEDADE PORTUGUESA DE QUÍMICA

3PYCheM

3rd Portuguese Young Chemists Meeting

9 - 11th May
Faculdade de Ciências
Universidade do Porto

Book of abstracts

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Book of Abstracts of the 3rd Portuguese Young Chemists Meeting

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This book is a compilation of the abstracts submitted by the authors for presentation at the meeting. There were introduced only minor editing alterations that do not change the scientific content.
The scientific content is sole the responsibility of the authors.

Posters

Gamma irradiation protects oleic acid from oxidation: an experiment in *Lactarius deliciosus* wild mushroom

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The short shelf-life of mushrooms is an obstacle to the distribution and marketing of the fresh product. Thus, prolonging postharvest storage, while preserving their quality, would benefit the mushroom industry as well as consumers [1]. There has been extensive research on finding the most appropriate technology for mushrooms preservation and a particular interest arises for wild species. Treatment by irradiation emerges as a possible conservation technique that has been tested successfully in several food products and is regulated in the European Union by the Directive 1999/2/EC.

In the present work, the influence of gamma irradiation dose (0.5 and 1 kGy) over the fatty acids profile of *Lactarius deliciosus* L. wild mushroom, collected in the Northeast of Portugal (November 2011), was evaluated by gas-chromatography coupled to flame ionization detection (GC-FID). The analyses were performed after 0, 4 and 8 days of storage at 4 °C in irradiated and non-irradiated samples (control). The control and the irradiated samples revealed an identical profile, with C18:0 (stearic acid), C18:2n6c (linoleic acid), C18:1n9c (oleic acid) and C16:0 (palmitic acid) as main fatty acids. These results are in agreement to the reported by our research group in a previous study with nutritional characterization of this species [2]. Nevertheless, some differences were found in the percentage of some fatty acids in the different samples, mainly in oleic acid. Control sample (non-irradiated) after 8 days of storage, showed a lower C18:1n9c percentage (decreased from 8 to 4.4%) contributing to a decrease in monounsaturated fatty acids (MUFA) levels. Otherwise, in the sample irradiated with 0.5 kGy the percentage of the mentioned fatty acid did not changed until day 8.

Overall, irradiation could be an alternative to ensure the quality and extend the life of mushrooms, protecting their fatty acids from oxidation, as is was demonstrated herein for oleic acid. In fact, food irradiation is now being commonly used in many countries, as people are becoming more aware of the role of food irradiation in regards to food safety and product shelf-life extension.

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[1] Akram, K.; Kwon, J. H., *J. Korean Soc. Appl. Biol. Chem.* **2010**, 53, 257-265.
[2] Barros, L.; Baptista, P.; Correia, D. M.; Morais, J. S.; Ferreira, I. C. F. R., *J. Agric. Food Chem.* **2007**, 55, 4781-4788.

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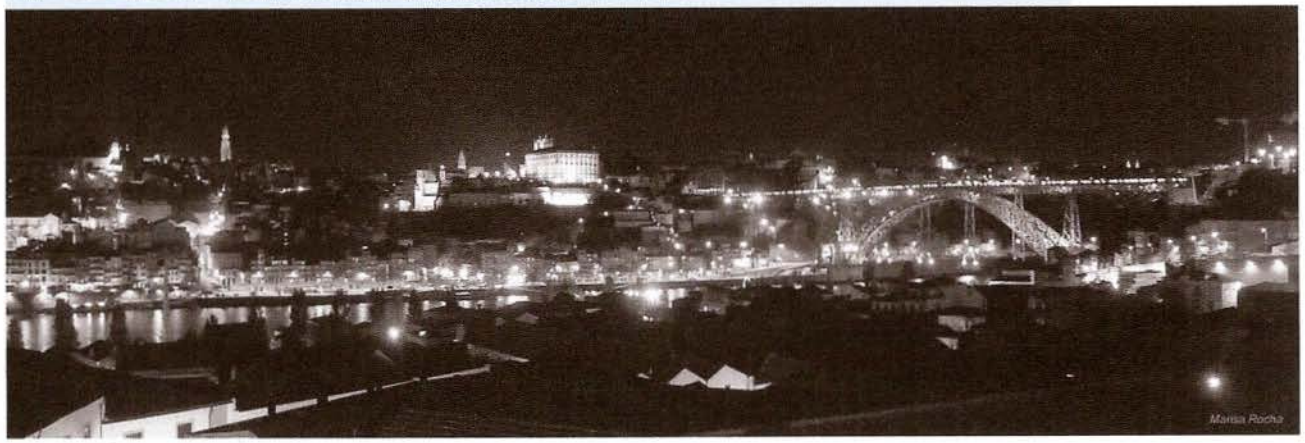
Poster Communications



P23 Gamma irradiation protects oleic acid from oxidation: an experiment in *Lactarius deliciosus* wild mushroom

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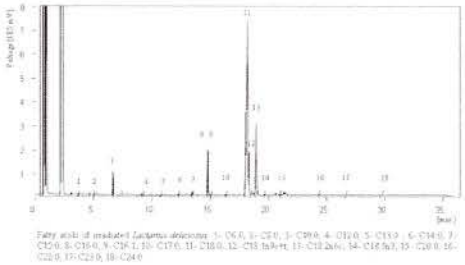

- Control and irradiated *L. deliciosus* samples revealed identical fatty acid profiles.
- Control sample showed a lower C18:1n9c content after 8 days of storage.
- Sample irradiated with 0.5 kGy maintained C18:1n9c content until day 8.
- Irradiation protected fatty acids from oxidation.
- Irradiation could be an alternative to extend the life of mushrooms.

P24 1,3-Dipolar Cycloaddition of (2*R*,4a*R*,8a*S*)-2-phenyl-4,4a-dihydropyrano[3,2-*d*][1,3]dioxin-6(8a*H*)-one with Aromatic Diazomethyl Compounds

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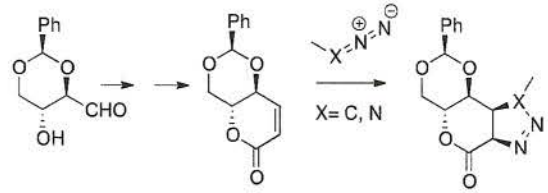

- Derivative of D-erythrose was used as dipolarophile in 1,3-dipolar cycloaddition.
- Reactions with alkyl azides and diazomethyl compounds were totally *regio*- and *stereo*-selective.