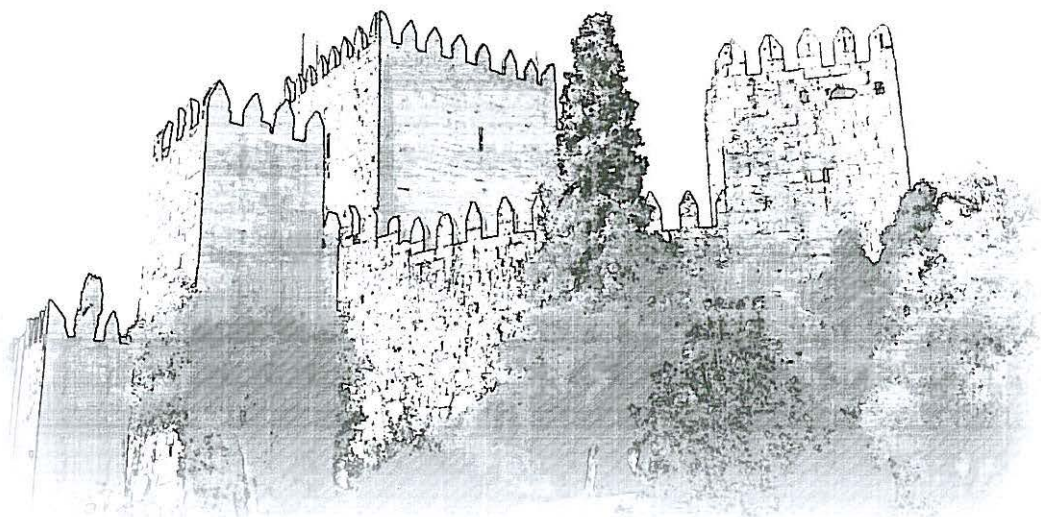


62nd International Congress and Annual Meeting
of the Society for Medicinal Plant and Natural
Product Research - GA2014



Book of Abstracts



31st August - 4th September 2014

University of Minho, Campus of Azurém
Guimarães, Portugal

Keywords: Wild mushrooms, *Boletus edulis*, electron-beam irradiation, carbohydrates, soluble/insoluble dietary fiber

References:

- [1] Cheung, P.C.K. (2013). Food Sci Human Wellness 2:162-166.
- [2] Fernandes, Á. et al. (2013). Food Bioprocess Tech 6:2895-2903.
- [3] Osborne, D.R. et al. (1986). Análisis de los nutrientes de los alimentos. (pp. 258). Zaragoza: Ed. Acribia.
- [4] Latimer G.W. (2012). Official methods of analysis of AOAC international, 18th edition. Gaithersburg: EEUU.

P2P21 Impact of gamma irradiation on nutritional composition and antioxidant activity of *Aloysia citriodora* Paláu and *Melittis melissophyllum* L.

Eliana Pereira^{1,2}, Amílcar L. António^{1,3}, Lillian Barros¹, Isabel C.F.R. Ferreira¹

¹ Mountain Research Centre (CIMO), ESA, Polytechnic Institute of Bragança, Portugal

² GIP-USAL, Faculty of Pharmacy, University of Salamanca, Spain

³ Centro de Ciências e Tecnologias Nucleares, IST, Universidade de Lisboa, Portugal

Aloysia citriodora Paláu and *Melittis melissophyllum* L. are examples of plants that have been used for medicinal purposes as dietary supplements or infusions [1,2]. The incorporation of plant extracts/compounds in pharmaceuticals has been increasing. However, due to the high demand of the pharmaceutical industry for the use of raw materials with good microbiological quality, decontamination techniques should be applied. Irradiation arises as an alternative [3]. The aim of this work was to evaluate the effects of gamma irradiation (0 kGy – control, 1 kGy and 10 kGy) on nutritional value and antioxidant activity of *A. triphylla* and *M. melissophyllum*. The nutritional value was determined following official analysis methodologies; free sugars were analyzed by high performance liquid chromatography coupled to a refraction index detector (RI-HPLC), fatty acids by gas chromatography coupled with a flame ionization detector (GC-FID), and tocopherols by HPLC-fluorescence. The antioxidant properties of the infusions were evaluated through free radicals scavenging activity, reducing power and inhibiting of lipid peroxidation. In general, gamma irradiation protected fructose, trehalose, and the major fatty acids found in *A. citriodora*. Furthermore, the dose of 10 kGy protected oxalic, malic, and quinic acids, as also protein and ash levels and revealed the highest antioxidant activity for the majority of the assays. The dose of 1 kGy protected all isoforms of tocopherols detected in the plant. Regarding *M. melissophyllum*, it was concluded that the control sample (non-irradiated) showed the highest antioxidant activity, as well as the highest levels of α -tocopherol. However, in general, it was observed that a dose of 10 kGy maintains the nutritional properties of the plant, such as protein and ash levels. Thus, we can conclude that irradiation is a decontaminating technique that does not interfere drastically with the studied nutritional and chemical parameters.

Acknowledgements: The authors are grateful to Proder (Project nº 53514, AROMAP) and to Fundação para a Ciência e a Tecnologia (FCT, Portugal) for financial support to CIMO (strategic project PEst-OE/AGR/UI0690/2011). The authors are also grateful to "MaisErvas - Aromáticas e Medicinais" for samples providing.

References:

- 1 Ragone et al., (2007) J. Ethnopharmacol. 113: 258–266.
- 2 Skrzypczak-Pietraszek, E. and Pietraszek, J. (2012) J. Pharm. Biomed. Anal. 66: 154-161.
- 3 Kume et al., (2009) Radiat. Phys. Chem. 78: 222-226.