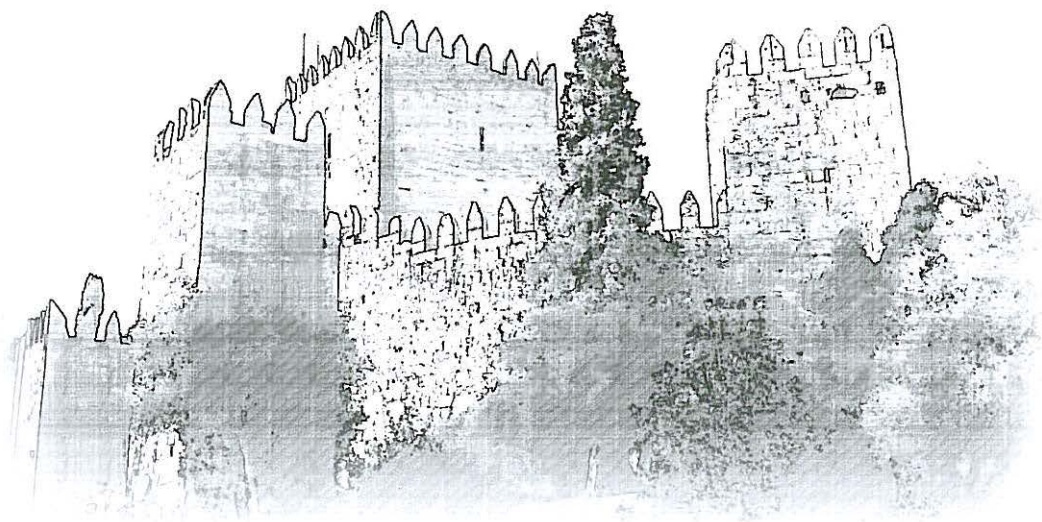


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Keywords: *Eucalyptus nitens*, bark extracts, triterpenoids, HCT116 cancer cells, cytotoxicity, apoptosis, cell cycle arrest

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P2P20 Electron-beam irradiation at low doses preserves dietary fiber content in *Boletus edulis* Bull.: Fr. wild mushroom

Ângela Fernandes^{1, 2, 3}, João C.M. Barreira^{1, 3}, Amílcar L. Antonio^{1, 4}, Patrícia Morales², Virginia Fernández², M. Beatriz P.P. Oliveira³, Anabela Martins¹, Isabel C.F.R. Ferreira¹

¹ Centro de Investigação de Montanha (CIMO), ESA, Instituto Politécnico de Bragança, Portugal

² Departamento de Nutrición y Bromatología II. Bromatología. Facultad de Farmacia, Universidad Complutense de Madrid, Spain

³ REQUIMTE/Departamento de Ciências Químicas, Faculdade de Farmácia, Universidade do Porto, Portugal

⁴ IST/CTN, Centro de Ciências e Tecnologias Nucleares, Universidade de Lisboa, Portugal

Mushrooms are considered a good source of non-digestible carbohydrates, which represent a group of dietary fiber with various beneficial health effects to humans e.g., improve the function of the alimentary tract, helps lower postprandial blood glucose, insulin and cholesterol, strengthens the immune system and antitumor activity [1]. Due to delicate nature, mushrooms suffer severe conservation problems and have to be processed to extend their short shelf-life. Drying is one of the most used processes for preserving mushrooms and, for decontamination, electron-beam irradiation also proved its technological feasibility to be safely used for reduce food losses [2]. In the present study, electron-beam irradiation (2, 6 and 10 kGy) was applied to dried samples of *Boletus edulis* Bull.: Fr. in order to evaluate the effects on fiber composition. The fruiting bodies were collected in Trás-os-Montes (Northeast of Portugal) in November 2012 and dried at 30° C in an oven. The irradiation was performed at the Institute of Nuclear Chemistry and Technology, in Warsaw, Poland. The determination of total available carbohydrate was carried out by the Anthrone method [3]. AOAC enzymatic-gravimetric methods, 993.19 and 991.42 were used for soluble and insoluble dietary fiber analysis [4]. *B. edulis* presented an important percentage of dietary fiber, soluble and insoluble in different ratios. The irradiated samples, especially for higher doses, gave some significant changes in total available carbohydrates and dietary fibers content; but, a lower dose (2 kGy) preserves carbohydrates, soluble and insoluble fiber content. Electron-beam irradiation at low doses is a feasible choice to extend mushrooms shelf-life and preserves the dietary fiber content.

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

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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.

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