



Natural products application: Health, Cosmetic and Food

Provided by nature, adapted scientifically for industry



Book of abstracts
1st International Online Conference
4th - 5th February 2021

Title

1st Natural products application: Health, Cosmetic and Food: book of abstracts

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Suport

Eletronic

Format

PDF

Edition

Instituto Politécnico de Bragança (IPB)

<http://www.ipb.pt>

5300-253 Bragança, Portugal

Tel. (+351) 273 303 382

ISBN

978-972-745-286-6

URL

<http://hdl.handle.net/10198/22068>



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PCF-37

***CALOCYBE GAMBOSA* (FR.) DONK WILD GROWING IN SERBIA AS FUNCTIONAL INGREDIENT IN OATMEAL**

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Edible mushrooms have been appreciated globally for their organoleptic, nutritional and chemical properties. In the present study, fruiting body of *Calocybe gambosa*, wild growing in Serbia has been chemically characterized (content of macronutrients, soluble sugars, tocopherols, fatty and organic acids) and its bioactive properties (antimicrobial and antioxidant) evaluated. Obtained results suggest that this mushroom is a source of carbohydrates and proteins, with low fat content. Sugar analysis revealed presence of trehalose and mannitol. Tocopherol composition revealed presence of α -tocopherol, while fatty acid analysis revealed presence of 24 fatty acids with prevalence of polyunsaturated fatty acids. Amongst organic acids, oxalic, quinic, malic, citric and fumaric acid were detected. Comprehensive antioxidant analysis (reducing power, DPPH scavenging activity, β -caroten/linoleic acid and TBARS assay) indicate that mushroom is a perspective antioxidant, whereas its antimicrobial potential turned out to be moderate. Nevertheless, at sub-inhibitory level methanolic extract disrupted cell-to-cell communication using *Pseudomonas aeruginosa* PAO1 as a model system. Finally, enrichment of oatmeal cookies with *C. gambosa* flakes not only improved nutritional value of cookies, but was praised among participants in sensory evaluation test (Table 1), indicating that along with results of chemical composition and biological activity, this mushroom has potential to be regarded as functional food.

Table 1. Oatmeal cookies enriched with *C. gambosa* flakes.

Amount per serving (1 cookie ~ 25 g)	Cookie with <i>C. gambosa</i>	Cookie without <i>C. gambosa</i>
Fat (g/100 g dw)	3.40	3.37
Proteins (g/100 g dw)	1.82	1.47
Carbohydrates (g/100 g dw)	14.95	13.47
Energy (kcal/100 g dw)	98.57	90.98
Appearance	4.66	4.25
Smell	4.25	4.25
Taste	4.66	4.25
Consistency	4.83	4.54
Overall acceptability by panelists	4.68	4.24

Acknowledgments:

This research was funded by Ministry of Education, Science and Technological Development of the Republic of Serbia, grant number 451-03-68/2020-14/200007.