Journal of Nutrition & Food Sciences
ISSN: 2155-9600

2020
Vol.10 No.5

Study on the antioxidant and antimicrobal activity of Lavender (Lavandula Angustifolia) beverages

Paraskevi Mitlianga[2], Charikleia Papadaki[1], Stavroula Giangou[1], Ioannis Tsakiris[1]

[1]Department of Chemical Engineering, University of Western Macedonia, Greece
[2]Department of Chemical Engineering, University of Western Macedonia, Greece

Abstract

Medicinal, aromatic plants and herbs are known from ancient times to be of important nutritional and healing value. One of the most known and abundant aromatic plant, indigenous in Greek peninsula is lavender (Lavandula angustifolia). Lavender is a new, alternative crop cultivate in the region of Western Macedonia, Greece. Many scientific literature data exist on the beneficial effects of lavender essential oil in human health. Nevertheless there are no many research data on the phenolic compounds, the antioxidant capacity and antimicrobial activity of lavender beverages. The aim of our work was to investigate the total phenolic content and the antioxidant capacity of beverages (infusions – decoctions) of three different varieties of lavender (Druzba, Sevtopolis, Lavandin), in order to define which beverage has the highest concentration of total phenolic compounds and the highest antioxidant capacity and thus exhibits the greatest benefit on human consumption. Antimicrobial activity of the extracts against selected microorganisms was also investigated.
Total phenolic content in the extracts was determined spectrometrically applying the Folin-Ciocalteu assay. In order to determine the antioxidant capacity of the beverages DPPH, ABTS and FRAP methods were used. In addition, the beverage preparation time was compared to antioxidant activity and total phenolic content, so that the optimum preparation time to be defined, in order to achieve the maximum beneficial antioxidant effect for human consumption. Our data suggest that the Lavandin variety beverages exhibit the higher antioxidant activity from all other varieties studied. Total phenolic content appears also higher in the Lavandin variety of L. Angustifolia.
Our results on lavender beverages (infusion and decostion) show a significant antimicrobial activity on microorganisms tested and are in agreement with literature data on antimicrobial activity of lavender essential oils. Further work needs to be done in order to isolate and characterize the biologically significant compounds that are present in lavender beverages.

Biography:

Paraskevi Mitlianga has completed her PhD in Biological Chemistry from University of Ioannina Medical School and postdoctoral studies from MDA Anderson University of Texas Medical School at Houston. She now is a full professor of Chemistry and Biochemistry at the Department of Chemical Enginnering, University of Western Macedonia, Greece.

Speaker Publications:

1. Kasapidou, E., Mitlianga, P. and Sossidou, E. Quality of the family poultry products produced in Greece. Europ. Poult. Sci., 78. 2014, ISSN 0003-9098.
2. Nikolakakis, I., Bonos, E., Kasapidou, E., Kargopoulos, A. and Mitlianga, P. Effect of dietary sesame seed hulls on broiler performance, carcass traits and lipid oxidation of the meat. Europ. Poult. Sci., 78. 2014, ISSN 1612-9199
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5. Eleni Kasapidou, Charikleia Papadaki, Paraskevi Mitlianga and Evangelia Sossidou. Family produced laying hen meat and eggs in Greece - Nutritional indices for the health conscious consumers. Europ. Poult .Sci., 79. 2015, DOI: 10.1399/eps.2015.74

29th World Conference on Food and Beverages; London, UK - August 24-25, 2020

Abstract Citation:

Paraskevi Mitlianga, Study on the antioxidant and antimicrobal activity of Lavender (Lavandula Angustifolia) beverages, Food and Beverages 2020, 29th World Conference on Food and Beverages; London, UK - August 24-25, 2020.