Meetings International

4th World Summit on

FOOD AND NUTRITION

April 06-07, 2023 | Madrid, Spain

## Evaluation of in vitro and in situ Antemis nobilis essential oil antimicrobial activity

**Natalia Cmikova**
Slovak university of Agriculture, Slovakia

Anthemis nobilis (Chamaemelum nobile), the so-called Roman chamomile, is a perennial herb of the Asteraceae family. It possessed antibacterial, antifungal, insecticidal, hypotensive, antiplatelet aggregation, antiinflammatory, hypoglycaemic, antioxidant, nervous, cytotoxic, brochodilatory, endocrine and many other effects. The aim of the research was to evaluate in vitro and in situ antimicrobial of the essential oil produced in Slovakia. The in vitro and in situ antimicrobial activity against Gram-positive bacteria (B. subtilis CCM 1999, E. faecalis CCM 4224, S. aureus subsp. aureus CCM 8223), Gram-negative bacteria (P. aeruginosa CCM 3955, S. enterica subsp. enterica ser. Enteritidis CCM 4420, S. marcescens CCM 8588, Y. enterocolitica CCM 7204), and yeasts (C. krusei CCM 8271, C. albicans CCM 8261, C. tropicalis CCM 8223, C. glabrata CCM 8270) were evaluated with disc, diffusion method, broth microdilution method and in vapor phase on vegetable and fruit models. The antimicrobial activity was either moderate or very strong with inhibition zones ranging from 8.67 to 16.67 mm in gram-positive and gram-negative bacteria and from 7.67 to 17.33 mm in yeasts. Among the tested bacteria and fungi, the lowest values of MIC were determined for Staphylococcus aureus and Candida glabrata. The vapor phase of Anthemis nobilis essential oil (ANEO) inhibited the growth of the yeasts of the genus Candida when tested in situ on pears. The strongest effect of yeasts in a pear model was observed against C. glabrata at concentrations of 250 and 500 µL/mL. The best antimicrobial activity of ANEO in the carrot model was found against S. aureus. The findings indicate that, besides being safe ANEO has antimicrobial activity, which makes it a potential substitute for biological food preservatives.

**Biography**

Natalia Cmikova is a PhD student at the Slovak University of Agriculture in Nitra. She works in the microbiology laboratory, where they study the biological activity of essential oils, micro and macro algae. They perform various microbiological analyses for including microbial, antioxidant and antibiofilm activity and try to find alternative sources to inhibit microorganisms and to extend the shelf life of agricultural products.

n.cmikova@gmail.com