ABSTRACT
Váňová, J.: Biological Activity of Plant Metabolites XVII. Antimicrobial Activity of Some Secondary Metabolites 2. Rigorous Thesis, Charles University in Prague, Faculty of Pharmacy in Hradec Králové, Department of Pharmaceutical Botany and Ecology, Hradec Králové 2009, 106 pp.
The antibacterial activity of 4 selected plant extracts was evaluated against *E. coli* O157:H7 and *Staphylococcus aureus*. Extracts were prepared by extraction in 80% ethanol and subsequent percolation. Two methods were used for determination of minimal inhibitory concentration (MIC). In the first case the values of MIC expected for *E .coli* on the basis of the other literature studies were not reached. All samples within the concentration range of 5 – 0,005 ppm which were prepared in two series were negative even after 48 hours exposition. In the second case better results were reached for *E. coli* and *S. aureus*. Two series of serial twofold dilutions within the concentration range of 25 %-0.02 % were prepared. The lowest values of MIC were exhibited by *Thymus vulgaris* extract, especially against Gram-positive indicator strain. Nevertheless the values of MIC remain very high (3.13 % for *E. coli*, 0.2 % for *S. aureus*).
For determination of minimal bactericidal concentration (MBC) in *E. coli* O157:H7 and *E. coli* O55 seven essential oils (EO) and two components of EO were tested in serial twofold dilutions within the concentration range of 2 %-0.03 %. The inoculation of samples on the Müller-Hünten agar was carried out after 15 minutes and 24 hours exposition, whereas the bactericidal effect against *E. coli* O157:H7 was proved for all tested EO and their components. The best result was reached by Cinnamomi zeylanici EO after 24 hours exposition (0.06 %).
The lowest value of MBC for *E. coli* O55 after 24 hours exposition was also reached by the same EO. The standard value of MBC for other samples was 0.25 %.106

Ten other samples were tested for the determination of MBC for *E. coli* O157:H7 and *S. aureus*. The microbes were exposed for 15 minutes and 24 hours to the samples in the serial twofold dilutions within the concentration range 2-0.03 %. After inoculation of the samples on Müller-Hünton agar the *trans*-cinnamaldehyde reached the best results. It was impossible to determine the standard value of MBC for other samples, because most of them did not prove even the growth inhibition of colonies in Petri dishes.
Keywords: secondary metabolites of plants, antimicrobial activity, farm animals, *Escherichia coli*, *Staphylococcus aureus.*