World Academy of Science, Engineering and Technology
International Journal of Animal and Veterinary Sciences
Vol:10, No:05, 2016

Synergistic Interactions between Secondary Metabolites in Rosmarinus officinalis L.

Authors : Ruta Mickiene, Audrius Maruska, Ona Ragazinskiene

Abstract : This research focuses on phytochemistry and antimicrobial activities of compounds isolated and identified from species Rosmarinus officinalis L. This is a study of synergistic effects between phenolic fraction and essential oils. The antimicrobial activity of extracts from Rosmarinus officinalis L. originated from the sector of medicinal plants, Kaunas botanical garden of Vytautas Magnus University Lithuania, were tested by the method of series dilutions, against different bacteria species. Investigated microorganisms were Escherichia coli, Proteus vulgaris and Staphylococcus aureus with and without antibiotic resistances originating from livestock. The antimicrobial activities of extracts were described by determination of the Minimal Inhibitory Concentration (MIC). Preliminary results show that the MIC range between 9.0 % and 12.0 % for the different Rosmarinus officinalis L. extracts and bacterial species. The total amounts of phenolic compounds and total amounts of flavonoids were tested in the methanolic extracts of the plants. The chemical composition for essential oils analysed by GC/MS. Predominant components were alpha pinene (20%), camphor (10%), 1.8-cineole (5%), phellandrene (6%), camphene (5%), beta pinene (4%), bornylacetate (4%), limonene (2%), borneol (3%), alpha terpineol (3%), cymene (2%), caryophyllene (15%), verbenone (7%), alpha terpinene (3%), eucalyptol (11%).

Keywords : antimicrobial activity, essential oil, Rosmarinus officinalis L., escherichia coli
Conference Title : ICADS 2016 : International Conference on Animal and Dairy Sciences
Conference Location : Berlin, Germany
Conference Dates : May 19-20, 2016