E363

In vitro antimicrobial activity of plant active components against Pseudomonas ludensis and Listeria monocytogenes

Khabat Noori Hussein[1,2] Molnár Tímea[3]; Richárd Pintér[1]; Adrien Tóth[1]; Emna Ayari[1]; László Friedrich[1]; István Dalmadi[1], Gabriella Kiskó[3]

[1]Dept. of Refrigeration and Livestock Products Technology, Faculty of Food Science, Szent István University
[2]Dept. of Animal Production, College of Agriculture, University of Duhok, Duhok, Kurdistan Region, Iraq
[3]Dept. of Microbiology and Biotechnology, Faculty of Food Science, Szent István University

The aim of my work was to study the antimicrobial activity of eight various components of plant origin on the growth of Pseudomonas lundensis and Listeria monocytogenes. For this aim different in vitro methods were used: agar plate diffusion, micro atmosphere, agar hole diffusion, micro-dilution, and gradient-plate method. In the first agar plate assay, p-cymene and γ-terpinene were not active in inhibiting the growth of the tested bacteria hence they were not used in further experiments. Both α-pinene and limonene were only partially effective, but these were screened only for their partial inhibition. The other four components show complete inhibition. Using the agar-hole diffusion method showed that carvacrol and thymol were found to be the most effective components and low concentration was sufficient to effectively inhibit the growth of bacteria. Additionally, eugenol and camphor show the same results but in higher concentrations. Gradiens plate method was used to determine minimum inhibitory concentration (MIC) values, in which it has been proved the most active components were thymol and carvacrol low MIC value (1.887 mg/ml) obtained for thymol. However, carvacrol was inhibited even at lower concentration. Further experiments could have determined the concentrations required.

E364

Effect of ultrasound treatment on orange juice freezing

Dávid Nagy[1], József Felföldi[1], Tamás Zsom[2], István Kertész[1], Viktória Zsomné Muha[1]

[1]Department of Physics and Control, Szent István University
[2]Department of Postharvest Science and Sensory Evaluation Szent István University

Ultrasound processing is a promising non-thermal processing technology and a potential alternative to replace thermal methods, which can alter the properties of the fruit juices.
Many industries using the so-called freezing concentration method. In freeze concentration operations the juices are processed below the water's freezing temperature (0°C) and thus dewatering the product. This method has significant advantages like, guaranty of aroma and flavor in the product and a more economical storage. One of the main variable for this method is the freezing point of the fluid. We applied high power ultrasound with a frequency of 40 kHz on orange juice for 15 min, 30 min and 60 min. After the treatment, the treated and the control juices were stored in the fridge below the water's freezing point temperature. During the storage, the juices were continuously monitored. The freezing point of the orange juice was determined by high-frequency ultrasound (260 kHz). The objective of this study was to evaluate the effect of active ultrasound on orange juice freezing properties.
Keywords: Orange Juice, Freeze, Ultrasound treatment, Ultrasonic measurement