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**10th Conference on Medicinal and Aromatic Plants of
Southeast European Countries**

May 20-24, 2018, Split, Croatia

Ubojz U. Kapankunoba

10th CMAPSEEC

10th Conference on Medicinal and Aromatic Plants
of Southeast European Countries
May 20-24, 2018, Split, Croatia

Jointly organized by:



Association for Medicinal and Aromatic Plants of Southeast European Countries (AMAPSEEC), Belgrade, Serbia

and

University of Zagreb, Faculty of Agriculture, Zagreb, Croatia

Institute for Adriatic Crops and Karst Reclamation, Split, Croatia

Centre of Excellence for Biodiversity and Molecular Plant Breeding (CroP-BioDiv), Zagreb, Croatia

Under the patronage of:

Ministry of Agriculture of the Republic of Croatia, Zagreb, Croatia

Ministry of Science of the Republic of Croatia, Zagreb, Croatia

Academy of Agricultural Sciences, Zagreb, Croatia

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ISBN: 978-953-7878-82-5

Printed by: Novi Val d.o.o.

Web: www.cmapseec2018.com

Citation: Carović-Stanko, K., Grdiša, M. (Eds.) (2018). 10th CMAPSEEC: Book of Abstracts, Split, Croatia, pp. 214

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CHITOSAN-PECTINE MICROPARTICLES LOADED WITH SAGE EXTRACT FOR EXTENDING SHELL-LIFE OF SAUSAGES

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An expanding tendency of global scale is the commitment of food processors and consumers to reduce the use of synthetic chemicals in food preservation. Recently, there has been a considerable interest in some common culinary herbs representatives (sage, oregano, etc.) with high polyphenolic content and volatile compounds with well-established antimicrobial and antioxidant potency directly to be added to food to improve its taste, smell and other organoleptic properties, to increase the freshness of products and at least to preserve the products in a proper way. However, these days numerous efforts have been made to find alternative solutions (innovative formulations and technological processes) to the aim of avoiding undesirable inactivation, and adulteration of the smell and taste. By applying the spray drying method, sage (*Salvia officinalis* L.) extract was successfully encapsulated into biodegradable chitosan-pectin microparticles (CTP-SE) and physicochemical characterization of the system was performed. TEM images showed that the particles were with spherical morphology and relatively smooth surfaces with a low porosity and uniform size. The mean size of the CTP-SE was from 9.21 to 9.45 μm , with unimodal narrow size distribution. Obtained FTIR spectra suggested possible interaction between the chitosan as coating polymer and rosmarinic acid. High encapsulation efficiency of the active principle was obtained (98.84%). Complete release of rosmarinic acid from the CTP-SE was achieved within 3 h. Dissolution data modeling best fitted to Korsmeyer-Peppas and the Higuchi kinetics. Disc diffusion and disk dilution methods were used in order to investigate the antimicrobial activity. Generally, better antimicrobial activity was observed towards Gram-positive than Gram-negative bacteria. The antioxidant activity was assessed by two methods (β -carotene/linoleic acid and thiobarbituric acid reactive substances assay). CTP-SE showed higher antioxidant capacity compared to ascorbic acid (reference standard substance), but rather moderate activity compared to butylated hydroxyanisole.

Key words: *Salvia officinalis* L., food preservative, biodegradable packing