Accepted Manuscript

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PII:	S0956-7135(18)30116-6
DOI:	10.1016/j.foodcont.2018.03.013
Reference:	JFCO 6027
To appear in:	*Food Control*
Received Date:	18 January 2018
Accepted Date:	08 March 2018

Please cite this article as: Zorica Stojanović-Radić, Milica Pejčić, Nataša Joković, Marija Jokanović, Maja Ivić, Branislav Šojić, Snežana Škaljac, Predrag Stojanović, Tatjana Mihajilov-Krstev, Inhibition of *Salmonella* Enteritidis growth and storage stability in chicken meat treated with basil and rosemary essential oils alone or in combination, *Food Control* (2018), doi: 10.1016/j.foodcont.2018.03.013

Inhibition of *Salmonella* Enteritidis growth and storage stability in chicken meat treated with basil and rosemary essential oils alone or in combination

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Abstract

Pathogens from the genus *Salmonella* belong to the group of the most common food poisoning causative agents. The present paper investigated the effect of the basil and rosemary essential oils as well as their combination on the growth of *Salmonella enterica* subspecies *enterica* serovar Enteritidis (*Salmonella* Enteritidis) in chicken meat, together with their spoilage protective potential at the two storage temperatures. Food model experiments included investigation of their effect to accompanying microbial flora on fresh meat, while anti-salmonella activity was evaluated on artificially inoculated raw and thermally processed meat. The tests were performed in two storage conditions, +4 °C (usual meat storage temperature) and +18 °C (room temperature, which favors the spoilage of investigated meat samples and development of food pathogens). Beside evaluation of microbiological status, physico chemical tests relevant as meat quality indicators (pH, color, texture, thiobarbituric acid, cooking loss), as well as sensory evaluation of the studied meat samples were performed. Changes in normal flora pointed to significant effect of both oils against microbial meat spoilage, where various groups were affected by different treatments. In addition, all the treatments reduced the number of salmonella cells in comparison to the control samples.