

EFFECTS OF LACTIC ACID, LINALOOL AND CINNAMALDEHYDE AGAINST CAMPYLOBACTER JEJUNI IN VITRO AND ON BROILER BREAST FILLETS

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Abstract. *Campylobacter jejuni* is the leading cause of bacterial human gastroenteritis in the European Union. Poultry products contaminated with *C. jejuni* are considered the main source of human campylobacteriosis. The aim of this study was to evaluate the effect of natural antimicrobials (lactic acid, linalool and cinnamaldehyde) against campylobacters in culture medium and on poultry breast fillets. In addition, total aerobic bacterial count was estimated on broiler breast fillets treated with different concentrations of bioactive compounds to determine whether it could prolong the shelf life of poultry product.

Despite the significant reduction of *C. jejuni* numbers in culture medium by lactic acid, linalool and cinnamaldehyde, these bioactive compounds had considerably lower effect on poultry product. *C. jejuni* numbers were reduced by 1.22 log₁₀ CFU/g when treated with 5% lactic acid ($P \geq 0.05$), by 1.21–2.72 log₁₀ CFU/g depending on the time after exposure to 2 % cinnamaldehyde ($P \leq 0.05$) and by 1.09 log₁₀ CFU/g after treatment with 2 % linalool ($P \geq 0.05$). Total aerobic bacterial count was reduced significantly by 3 % and 5 % lactic acid and 2.5 % and 3 % cinnamaldehyde ($P \leq 0.05$).

This research offers new effective control measures for campylobacters as possible replacement to chemicals now suggested for decontamination purposes.

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