

5th World Congress on
MICROBIAL BIOTECHNOLOGY & VACCINE DESIGN
September 17-18, 2018 Lisbon, Portugal

Bacteriophages for decontamination of artificially contaminated chicken meat

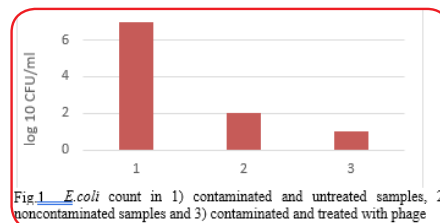
M Loladze, T Gabisonia, N Chakhunashvili, M Nadiradze, M Alibegashvili, N Tamarashvili, T Katamadze, T Kalendarishvili, T Eliava and K Samkurashvili
G. Eliava Institute of Bacteriophage, Microbiology and Virology, Georgia

Introduction: Bacterial food poisoning remains a major worldwide health problem. The increased incidence of foodborne illness has caused substantial morbidity and mortality worldwide annually. A substantial number of works have described the use of bacteriophage biocontrol to target a variety of bacterial pathogens in food and bacteriophage biocontrol is increasingly recognized as an important tool for elimination of pathogenic bacteria from food.

Aim: This work was conducted to study the efficacy of bacteriophage cocktail for reduction of contamination in chicken meat, on the model of artificial contamination with *E. coli*.

Method: A total of 30 random samples of raw chicken were enrolled in our work. The samples were divided into three equal groups (10 samples each). A 0.5 ml of the diluted (105 CFU/ml) *E. coli* culture was distributed over the surface of the chicken meat. The first and second groups were inoculated in such method. Samples from third group were left untreated. All samples were left for 30 minutes at room temperature to allow attachment and adsorption of the inoculated bacteria. After 30 minutes samples from the contaminated first group were treated with 50 ml phage cocktail (105 PFU/ml), samples from the second contaminated and third non-contaminated groups were treated with 50 ml of sterile saline. After 1 hour at room temperature the tested microorganism (*E. coli*) was enumerated from all samples.

Results & Conclusion: After bacteriophage cocktail treatment of the chicken meat, experimentally contaminated with *E. coli*, a significant reduction of contamination was observed. These data suggest that bacteriophages can be successfully used to reduce foodborne pathogen contamination in food chain.



Biography

M Loladze is a leading Scientist of the Laboratory of Applied Microbiology at the G. Eliava Institute of Bacteriophage, Microbiology and Virology, Georgia. She is author of more than 30 scientific articles and has participated in many local and international scientific projects.

mananalola@yahoo.co.uk

Notes: