

4th World Congress on **Virology**

October 06-08, 2014 Hilton San Antonio Airport, TX, USA

Investigating the use of bacteriophages extracted from local fish water tanks in Saudi Arabia to control *Campylobacter jejuni* found on Shrimps

Najat Marraiki
Saudi Arabia

Campylobacter jejuni is commonly found in animal faeces and accounts for a large percentage of acute bacterial enteritis cases reported in the United Kingdom and in the majority of the developed world. Once widespread, infection is difficult to prevent. Bacteriophages pose as natural enemies of bacteria, therefore phage therapy is one of the possible means to combat the colonisation *C. jejuni* and limit its entry into the human food chain. The study sought to investigate the use of phage therapy in the biocontrol of *C. jejuni* found on shrimps using a cocktail of phages extracted from local fish water tanks in Riyadh, Saudi Arabia. Different phage concentrations were used ranging from 10⁵ to 10¹⁰ PFU/ml. The phage cocktail was applied to samples of shrimps obtained from the local fish market at 0, 0.5, 1, and 1.5 hours after contamination. The samples were then stored at a temperature of 4°C for 7 days in the refrigerator. The phage cocktail was found to reduce bacterial pathogen population in all of the 0.5, 1, and 1.5 hours from application. However, the cocktail was found to significantly reduce pathogen populations when applied in higher concentrations and shortly after the induced contamination. A concentration of 10¹⁰ PFU/ml reduced pathogen populations to non-detectable levels within 3 days of storage when applied 0.5 hours after contamination. The study concluded that high phage concentrations of at least 10⁷ PFU/ml were needed to achieve a significant reduction in the population size of *C. jejuni* and when applied up to 1 hour after contamination.

najat.marraiki@gmail.com