

Application of Phage Therapy in Foods of Animal Origin

Firaol Bekele Bayecha*

Haramaya University College of Veterinary Medicine, Ethiopia

***Corresponding Author:** Firaol Bekele Bayecha, Haramaya University College of Veterinary Medicine, Ethiopia.

Received: April 27, 2021

Published: June 05, 2021

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In the world people purchase and consume different types of animal source food products by considering these products is safe and free from any microbial agents which cause disease. But, every year, thousands of people get sick and loss their life due to different types of foodborne pathogens spread through foods [1].

Several approaches including traditional antimicrobial methods are used to help improve the safety of our foods but they have significant downside effect, such as a huge initial capital, significant damage to processing materials due to their corrosive properties, and a deleterious impact on organoleptic qualities and nutritional content of foods [2,3].

Now days, optimistic technique that can answer several of these shortcomings is effective uses of bacteriophages in animals to specifically target bacterial pathogen and remove them from foods of animal source without deleteriously impacting their normal and often beneficial microflora. Bacteriophage is a virus. Hence they have viral structure which contain Nucleic acid which is single or double stranded RNA or DNA, enclosed by a protein coat named capsid. In the cell, phages have to cycle somewhere between either lysogenic or lytic. Regarding to the lytic bacteriophage, their DNA is not integrated within the bacterial cell genome and replication is lonely from the host bacterial DNA and they multiply in large numbers in bacterial cells, result in cell lyses. In the case of the lysogenic phase, the bacteriophage nucleic acid integrates in to the host bacterial genome. It stays in a host cell as a dormant condition for a several time periods. Lysogenic phase may turn to the lytic cycle by adverse environmental impact to the host bacterium and may result in in cell lyses [4,5].

Reviewing the utility and application of phage therapy in a variety of foods of animal origin is important to insight the current

figure of Phage therapy against a variety of foodborne pathogens. Though there are several challenges are still there with bacteriophages, it is use are surprisingly increasing and recognized as an alternative treatment for food and therapeutics in safe manner without affecting nutritional value of food, without changing organoleptic quality aspects of food and most importantly it is naturally method in eliminating bacterial pathogen from foods. This technology must be transferred to the field and to commercial environments to assess the possibility of controlling animal food origin under more realistic production and processing conditions.

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Volume 3 Issue 7 July 2021

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