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## Use of bacteriophages in food production

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The bacteriophage is a bacterial virus as it utilizes bacteria as its host to complete its life cycle. Use of bacteriophages in the food and feed industry is alternative for antibiotic and thermal preservation. Bacteriophages are used across dairy products, meat products, fresh and processed vegetable and fruits products. It has a narrow spectrum antimicrobial. Each phage has a specific target organism. The aim of this work was to verify the biological protection effectiveness of crop products. Selected bacteria in our experiment are *Dickeya dianthicola* and *Pectobacterium carotovorum* causing potatoes rots and other crops. These phytopathogens are returned to potato process. Cross-contamination of other crops occurs by returning the washing water and soil back to the agricultural land. Therefore, it is necessary to treat these contaminated materials to prevent further contamination of crops. The efficiency of bacteriophage utilization was tested in liquid media using the Biosan bioreactor. This instrument uses spectrophotometric continuous measurement of the increase in the number of bacteria (growth curves) at different temperatures. Bacterial growth curves were also monitored after the addition of bacteriophages. Further experiments were performed on solid agar media where the growth of bacteria was visually monitored and compared with the growth of bacteria inhibited by bacteriophages. Similar experiments were also performed directly on potato slices. The positive effect of using bacteriophages to treat food (potatoes) has been proved. In particular, it was an extension of the lag-phase of selected bacterial phytopathogens.

**Keywords:** Bacteriophages, Food Preservation, Non-Thermal, Phytopathogenes, Potatoes

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## Biography:

Filip Beno research focuses primarily on the quality of meat and meat products (from farm to meat/consumer). I am also involved in the development of new recipes to reduce the salt content of meat products. We cooperate with many companies, we consult technological problems and perform analyzes of their products. I also focus on technology and processing of vegetables and fruits and their products. The study at UCT Prague includes also consultations on bachelor's and master's theses, leading, laboratory work of students and, last but not least, publishing activities.