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Controlling *Listeria monocytogenes* & *Salmonella* in Food Processing using Phage technology

Phages are the most abundant microorganisms in the world and are used for targeted bacterial control in food processing. Phages can effectively be applied as surface intervention against *Listeria* in ready to eat food production and as post harvest intervention against *Salmonella* on fresh poultry. Critical success factors to effectively apply phages in food processing environments are distribution over the food surface, the concentration and the contact time. Food processors can apply phage by spraying or dipping on the surface of food products, on food contact surfaces like slicers and belts, or as part of the sanitation regime combatting biofilms. Phage kills pathogenic bacteria up to 99.9% on food products. *Listeria* contamination is typically found on the outside of food products. Phages are very specific, *Listeria* phages only kill the *Listeria* genus. Therefore, phage technology cannot mask bad hygiene, nor will it interfere with starter cultures in cheese making. Phages are considered a processing aid, hence no labeling is required, and there is no effect on the colour, texture or taste. *Salmonella* continues to be a major cause for foodborne illnesses, despite the use of chemical interventions. Recently FSIS began on line posting of individual establishments' category status for *Salmonella* performance standards for poultry carcasses, with parts standards soon to follow. This increases pressure on industry to meet or exceed USDA's published standards. In addition, industry is beginning to feel pressure by workers and inspectors related to health hazards associated with the use of harsh chemicals, especially peracetic acid. Combined, these pressures along with providing safe food to consumers highlights the importance of finding new and innovative approaches to reduce or eliminate *Salmonella* in fresh meats. Phage technology is a natural and organic antimicrobial intervention that kills *Salmonella* with no impact on workers safety leading to safer products.

Biography

Micreos is a Dutch biotech scale up, pioneer and market leader in the development of antibacterial phage technology for food safety and human health applications. Various leadership positions at Corbion Purac in Brazil, USA and the Netherlands. Global responsibility for marketing, sales, business development and innovation for the food business. Corbion (former biotech part of CSM) is a leading global company in biobased ingredients & chemicals.

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