conferenceseries.com Olga Fysun, J Food Microbiol Saf Hyg 2017, 2:4(Suppl) DOI: 10.4172/2476-2059-C1-005 7th EUROPEAN FOOD SAFETY & STANDARDS CONFERENCE

November 13-14, 2017 | Athens, Greece

Detection and evaluation of biofilms in dairy processing equipment

Olga Fysun Technical University of Munich, Germany Robert Bosch GmbH, Germany

B infilms are populations of microorganisms that accumulate at surfaces with thicknesses ranging between several µm to mm and are typically surrounded by a matrix of extracellular polymeric substances (EPS). Focusing on the dairy industry, it was found that biofilms may develop in processing equipment within a few hours. Milk is a very perishable product and is susceptible to contamination by biofilms. The biofilm can accumulate in milk pipelines, storage tanks and in heat exchangers. Biofilm formation in dairy processing equipment is influenced by several factors: properties of the contact surface, temperature, pH-values, presence of other microorganisms. *Pseudomonas* biofilms, which are often present in filling equipment in the dairy factory concern the quality of manufactured milk. In this study, the biofilm formation was investigated using experiments that simulate the filling process of dairy products. Biofilm formation on filling a test tube with PTFE liner and stainless steel 1.4404 hose connections were tested with pasteurized milk and UHT milk inoculated with *Pseudomonas fragi* at several temperatures (4°C, 20°C) and Reynolds numbers (laminar and turbulent flow). The higher temperature and laminar flow showed a significant influence (p<0.05) on the biofilm development. Also, the accumulated biomass on the PTFE and stainless steel 1.4404 differs showing more biomass on the PTFE. However, the fat content of tested milk has not shown a significant relation to biofilm formation. Based on the results, it can be concluded that processing conditions should be optimized to reduce the biofilm formation in dairy processing equipment.

Biography

Olga Fysun has completed her Master's degree from University of Hohenheim (Food Science and Technology) in Stuttgart, Germany. During her study at the University of Hohenheim she gained experience in Taiwan, China, Czech Republic and Poland. She is working on her PhD at the Technical University of Munich since January 2016.

Olga.Fysun@de.bosch.com