PEB2.34 **Effect of disinfection on the survival of *L. monocytogenes* on stainless steel plates with grooves**

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Listeria spp. often survive in production environments, in particular on places which are difficult to clean and disinfect. On such spots, the presence of food debris enhances survival and growth of microorganisms, including *Listeria* spp. In this study, tests were performed on stainless steel surfaces with grooves: all 1 mm width with depths of 0.5, 0.2, 1, 2 or 5 mm. The plates were surface-inoculated with a cocktail of three *L. monocytogenes* species, and then exposed to chlorine (Suma Tab D4 sodium dichloroisocyanurate, 240 and 300 mg/L) or Qac (Suma Bac D10 quaternary ammonium compound, 740 mg/L) for 5 minutes. In further experiments the test strains were applied to the surfaces in 10% suspensions of milk, ham, smoked salmon and endive to simulate organic soiling. The tests were performed under wet (Rh=90%) and dry (Rh=50%) conditions. A final experiment was performed in which the test strains were allowed to produce 2 weeks old, mixed biofilms at 15°C, in the presence of the four food residues.

In wet conditions, a high reduction of *L. monocytogenes* (2-3 log units per groove) was obtained with Qac, while the use of chlorine (240 mg/L) resulted in only 1 log reduction. Increasing the chlorine concentration to 300 mg/L gave reductions of 1-4 log units. In dry conditions the observed reductions were lower: 0.5-2 log units for Qac and 2-4 log units for chlorine. The presence of food residues negatively influenced the activity of both disinfectants with a log factor 2. The reduction of *Listeria* in the biofilms was dependent on the type of food. In biofilms with vegetables highest reductions were obtained (4 log units), followed by the biofilms with fish, ham and milk (3, 2 and 1.5 log units respectively). The reduction of the test strains was also dependent on the depth of the grooves: in the deepest groove 0.5-2 log units, and in the shallow grooves (3-4 log units). Furthermore, if biofilm material from the grooves was used in suspension tests with the same concentrations of disinfectants, *Listeria* counts were below the detection levels which indicated that the cells were not resistant. Probably the disinfectants did not reach all cells in the biofilm. Therefore it is important to prevent or minimize accumulation of *Listeria* on food processing facilities by using surfaces without pits or cracks or hygienic designed equipment, incorporated with effective cleaning and disinfection procedures.