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## Influence of time and concentrations of glucose and sucrose on biofilm formation by strains of *Listeria monocytogenes*

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*Listeria monocytogenes* is a pathogen of serious concern in the food industry. Biofilm formation by this pathogen enables persistence in the food processing environment. This study assessed the abilities of some food and disease outbreak strains of *Listeria monocytogenes* to form biofilms and tested the effect of various glucose and sucrose concentrations over some incubation periods. Biofilms were developed in polystyrene tissue culture plates by 4 food isolates and 4 disease outbreak isolates of *L. monocytogenes* strains in tryptic soy broth (TSB) with 3 different concentrations (0, 2% and 4%) of glucose or sucrose at 37°C during a period of 24 to 120 h. The biofilms formed were quantified using the crystal violet binding assay. The influence of glucose, sucrose and incubation time on biofilm formation was tested for significance at  $p < 0.05$  using the univariate analysis of variance on Statistical Analysis Software (SAS). Both sugar inhibited biofilms masses of *Listeria monocytogenes* strains tested. Significantly ( $p < 0.05$ ) high levels of *Listeria monocytogenes* biofilm reduction were observed with the use of sucrose than glucose and at increased sugar concentrations. Both sugars have very strong effects against biofilm masses of *Listeria monocytogenes* strains H8738, H8506, H7962 and 7869 than other strains. This study concludes that the use of sugars could pave a way for effective control of *Listeria monocytogenes* biofilms in the food industry.

### Biography

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