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Affiche

## Ability of Biofilm formation of *Listeria monocytogenes* strains isolated from slaughterhouses in Quebec

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*Listeria monocytogenes* is a pathogenic bacterium found in the environment and food. It causes listeriosis, a serious disease that presents largest fatality rate among foodborne illness. The persistence of these bacteria in food processing plants, favored by biofilm formation is a major problem both for industry and public health. The aim of the study was to compare strains isolated from three sectors in slaughterhouses for their ability to form biofilms. The strains were isolated from holding pens, slaughtering, and cutting in 4 slaughterhouses and for 3 different periods of the year. Biofilm formation analyses were performed for 186 strains under static conditions at 30 °C for 48 hours and 7 °C for 15 days, frequent temperature in meat processing plants. Biomass production in BHI is measured in microplates after staining with crystal violet and measuring the absorbance at 595 nm, the data is normalized to obtain inter strain comparability in 96 well plate. Results show significant difference in biofilm formation between strains according to the period of sampling and origin of strains (slaughterhouse). Biofilm formation by strains

belonging to the sampling of period 2 (February to may 2014) were greater than in summer 2015 at 30 °C ( $p < 0,0001$ ) and at 7°C ( $p = 0,019$ ). Strains isolated from plants 1 and 2 produced more biomass than those collected from plant 4 at 30 °C ( $p = 0,0015$ ) and 7 °C, biofilm formation in isolates from plants 1 and 2 were greater than in strains from plants 3 and 4 ( $p < 0,0001$ ). No difference in biofilm formation ability was revealed depending on the place sampled in the plant (lairage, slaughter or cutting rooms), whatever the temperature tested. Among strains studied here, strong differences in biofilm forming ability were identified; these results are the beginning of our investigation aiming to answer the question of strain persistence.