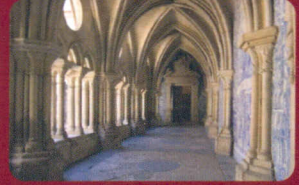


2010

# ISOPOL XVII

International Symposium on Problems of Listeriosis



## Book of Abstracts

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REFERENCE

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### Occurrence of *Listeria monocytogenes* in food products collected in Portugal from retail establishments and food plants

Mena, C., Carneiro, L., Santos, I., Magalhães, R., Almeida, G. and Teixeira, P.

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Listeriosis is an infection caused by the bacterium *Listeria monocytogenes*. The ingestion of contaminated food with this microorganism may cause serious health problems for consumers. During two years (2007 and 2008) the presence of *L. monocytogenes* was evaluated in a total of 1476 food samples, collected from retail and food plants. The detection of the microorganism was performed using the automated VIDAS system and the positive results were confirmed following the ISO 11290 standard. *L. monocytogenes* was detected in 134 (9.1%) of the analyzed samples. Most of positive samples were from foods normally submitted to heat treatment before consumption such as pré-cooked foods (30.0%, 12/40; pizza, pasta, rissois, etc) and fermented meat products (20.6%, 33/160; farinheira, alheira, morcela, bacon), from raw products (16.0%, 58/362; raw meat, vegetables and fish), and from “ready-to-eat” foods: fermented meat products (8.8%, 10/114), vegetables salads (1.1%, 2/174), ready cooked meals (4.5%, 6/134), cheeses (4.6%, 12/262) and fresh cheese (1.3%, 1/80). The occurrence of the microorganism in ready-to-eat foods is of more concern. *L. monocytogenes* grows at refrigeration temperatures and could achieve levels of contamination that can cause disease. Also, foods that will have a heat treatment at consumer’s home could represent a hazard if cross contamination of food items that will be consumed without any further step of destruction occurs.

REFERENCE

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167

### *Listeria monocytogenes* biofilms grown at 12 °C showed reduced susceptibility to sanitizers

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*Listeria monocytogenes* may form biofilms on food contact surfaces of difficult sanitization which may lead to recurrent contamination of food products. The eradication of biofilms can only be achieved by using adequate hygienization routines which will ultimately ensure food safety. The biofilm forming ability of four *L. monocytogenes* strains from different origins, cheese, dairy environment and from human cases of listeriosis was evaluated, either in pure culture or in co-culture with *Pseudomonas aeruginosa*, at 37 °C and 12 °C using the Calgary Biofilm Device® (CBD). The minimum biofilm eradication concentration (MBEC) was determined for four commercial dairy sanitizers (one alkyl amine acetate based, T99; two chlorine based, T66 and DD and one phosphoric acid based, BP). Co-culture biofilms had an average total population of 7 to 8 Log<sub>10</sub> CFU/peg. *P.aeruginosa* was the dominant species, either at 37 °C or at 12 °C, representing 99% of the total CFU/peg. *L. monocytogenes* biofilms grown, either at 37 °C or 12 °C, although with different incubation times (24 hours and 7 days, respectively) reached a similar cell density (6 Log<sub>10</sub> CFU/peg). Nevertheless, the biofilms produced at 12 °C were generally less susceptible to the sanitizers than when produced at 37 °C. One of the strains (3880) retrieved MBEC values of 30720 µg/ml and 16000 µg/ml for T99 and BP, respectively. These values were above the maximum in-use recommended concentrations (T99 – 29700 µg/ml and BP – 11500 µg/ml) for these agents. The growth in co-culture also proved to be relevant regarding disinfectant susceptibility, as the co-cultures were generally less susceptible than *L. monocytogenes* pure cultures. The MBEC values obtained for the chlorine based agents were never over recommended in-use concentrations which may indicate a more efficient ability to eradicate biofilms, if in-use conditions are met.

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