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## "Survival of *Listeria monocytogenes* in Food Residues on Packaging Materials for Dairy Products"

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*L. monocytogenes* (*L.m*) is known for causing foodborne infections often associated with a high mortality rate. Survival under adverse conditions of *L.m* for extended periods of time has been largely reported. *L.m* contamination in dairy products may be transferred on packaging materials which could then potentially serve as source of cross-contamination in the home.

The purpose was to quantify the survival of *L.m* on packaging materials soiled with cheese purge and stored at different temperatures.

Three materials, used for packaging of dairy products, with different physico-chemical properties: poly-coated materials (polythene/parchment paper - A; polythene/polyamide - B) and parchment paper - C were selected. Each material (5x5 cm) was inoculated with a 5-strain mixture of *L.m* (2.5 log CFU/cm<sup>2</sup>) of dairy origin suspended in a non sterile-homogenate, simulating cheese purge. Samples were stored for up to 56 days at 4°C, 12 and 37°C, and periodically analyzed for *L.m* and total bacterial populations. Three samples were analyzed at each sampling point.

Survival of *L.m* varied among packaging materials as well as at different storage temperatures. Counts decreased on all materials stored at 37°C and reached non-detectable levels on B by day 4 and on A and C by day 7. Initial levels (2.5 log CFU/cm<sup>2</sup>) of *L.m* increased to 3 log CFU/cm<sup>2</sup> within 4 days of storage at 12°C on A and C. After 56 days at 4 and 12 °C, *L.m* was recovered from all the tested materials, with counts ranging from 1.64 log CFU/cm<sup>2</sup> (B) to 3.24 log CFU/cm<sup>2</sup> (C) and from 0.4 log CFU/cm<sup>2</sup> (B) to 3.68 log CFU/cm<sup>2</sup> (C), respectively.

Survival of *L.m* on packaging materials raises concern because consumers may not expect pathogen contamination on the package and could consequently do nothing to prevent cross-contamination in the home environment.