

Listeria monocytogenes: A zoonotic food borne pathogen

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Listeria monocytogenes (Lm) is an intracellular zoonotic food borne pathogen which causes a severe disease called listeriosis in high risk groups. However, information is limited about the prevalence and sources of Lm in blue crab meat and crab processing plants in Maryland. The purpose of this study was to address this data gap. For this study, samples were collected from seven processing plants in Maryland from May through November (2006-2007). A total of 488 raw crabs, 624 cooked crab meat (crab meat), and 624 environmental samples were analyzed by standard methods. Lm was isolated from 4.5% of raw crabs, 0.2% of crab meat and 2.1% of environmental samples. Among the environmental sites, the most contaminated were raw crab coolers (6.4%) and receiving docks (5.1%). Most of the isolates (97%) were resistant to at least one antimicrobial agent and 66% were resistant to three or more antimicrobials. Eight different serotypes were found among 76 Lm isolates and the most common serotypes were 4b, 1/2b and 1/2a. Automated EcoRI ribotyping differentiated 11 ribotypes among the 106 Lm isolates. The distribution of the ribotypes in each processing plant had a unique contamination pattern. A total of 92 ApaI and 88 AscI pulsotypes were observed among 106 Lm isolates and distinct pulsotypes were observed in raw crabs, crab meat and environmental samples. Ribotypes and serotypes recovered from crab processing plants included subtypes that have been associated with listeriosis cases in other food outbreaks. These results indicate that raw crabs and associated surfaces are potentially important initial sources of Lm contamination in blue crab meat and crab processing plants.

Biography

Salina Parveen is a tenured Associate Professor in Food Science and Technology Program at the University of Maryland Eastern Shore. She received more than 1.5 million dollars external research funding during last five years. Her research generated more than 100 peer-reviewed journal articles (26), abstracts (74), and invited presentations (20). Dr. Parveen received several awards for her excellent performance in teaching, research and service. She served/is serving as chair and member on 23 Ph.D. and 10 M.S. committees. Furthermore, she serves on the editorial board of peer-reviewed journal, Infection and Drug Resistance. Currently, she is serving as major advisor for six doctoral students and one master's student, three undergraduate students and one research specialist.

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