

Investigation of pathogenic bacterial contaminations of fish handled in Mannar, Sri Lanka

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About 19,000 Metric tons of marine fish is produced in Mannar annually and information on current microbiological quality of fish produced in Mannar is not adequate. Therefore, the present study investigated into the pathogenic bacteria in fish and sources of contamination of fish during the period from May to September in 2016. This study assessed faecal coliform, *Escherichia coli* (*E.coli*), and *Salmonella* in 14 fish samples from one day boats, 12 samples from fish collecting sheds (Wadiya) by the lagoon, 11 samples of lagoon water used for washing of fish, 9 ice samples used for chilling of fish at Wadiya, 19 swab samples from fish holds of boats and 7 swab samples from floors of Wadiya. About 54% of fish collected from both boat and Wadiya (14/26) contained *E.coli* in the range of 0.36–460 MPN/g whereas *Salmonella* sp. was present in 7% (1/14) of fish obtained from boats alone. Lagoon water samples and ice samples obtained from Wadiya were highly contaminated with *E.coli* having MPN numbers ranging from 350 to 5500 and from 20 to >18000 MPN/100 mL respectively. *Salmonella* sp. was present in 11% (1/9) of ice samples. The population level of *E.coli* in swabs obtained in fish hold of boats and Wadiya ranged from 5 to >1800 and from 350 to >1800 MPN/cm², respectively. *Salmonella* sp. was absent in both Wadiya and boats. Results of the present study showed that fish landed at fish landing sites in Mannar were contaminated with pathogenic bacteria such as *Salmonella* sp. High faecal contaminations as mentioned above existed in main utilities used in fish handling such as lagoon water and ice showing the need for supply of good quality water and ice while pathogenic bacterial contaminations on the surfaces of boats and Wadiya indicate the need for adopting better sanitation procedures such as use of sanitizers to clean fish contacting surfaces at fish landing sites in Mannar.

Keywords: *Escherichia coli*, faecal coliform, fish, Mannar, *Salmonella* sp.

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