

## SOURCES OF FAECAL CONTAMINATION OF FRESH FISH HARVESTED BY MULTI-DAY BOATS

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Presence of faecal coliforms in fish harvested by multi-day boats is an indication of the poor quality of fish. Therefore this study aims at finding sources of faecal contamination of fish harvest by multi-day boats from the time of harvesting to the transportation to the local market. Samples of fish harvested by multi-day boats, ice samples and swab samples collected from various points from multi-day boats to trucks that are used to transport the harvested fish were analysed for microbiological parameters by using total plate count, MPN (Most Probable Number) method and PCR (Polymerase Chain Reaction) technique to determine the points of possible faecal contamination of fish. 50 Samples were collected (10 from each sampling point) from Beruwala fisheries harbor. Study was carried out from May 2011 to August 2011. Results of mean total plate count showed the highest value in fishholds ( $4.4 \times 10^5$  cfu/cm<sup>2</sup>). Mean total plate count of fish, truck, deck of the boat and ice in fishhold were  $1.8 \times 10^5$  cfu/g,  $2.8 \times 10^4$  cfu/cm<sup>2</sup>,  $1.8 \times 10^4$  cfu/cm<sup>2</sup> and  $1.1 \times 10^4$  cfu/100ml respectively. According to the results obtained, the highest faecal coliform content was obtained from swabs collected from trucks (1030 MPN/cm<sup>2</sup>) transporting fish. Swabs collected from deck of the boats gave a mean faecal coliform content of 712.5 MPN/cm<sup>2</sup>. Mean faecal coliform content of fishhold, ice in fishhold and fish were 395 MPN/cm<sup>2</sup>, 226.25 MPN/100ml and 7.4 MPN/g respectively. The highest mean *E.coli* content was obtained from ice of fishhold (122 MPN/100ml). Mean *E.coli* content of deck of the boat, fishhold, trucks and fish were 80 MPN/cm<sup>2</sup>, 74.5 MPN/cm<sup>2</sup>, 23.5 MPN/cm<sup>2</sup> and 0.3 MPN/g respectively. Samples which gave positive results for *E.coli* were confirmed by using PCR technique. Target gene used was uidA that codes for beta glucuronidase and it gave 147 bp bands for positive samples. In this study, all the samples which gave positive results for *E.coli* using biochemicals gave positive bands. According to the results obtained, major source of faecal contamination was ice in the fishhold. Also fishhold had the highest mean value total plate count. Trucks (before loading fish) had the highest mean value of faecal coliform bacteria. Therefore, to reduce the risk of faecal contamination in fish harvested by multi-day boats, it is essential to consider the factors that lead to faecal contamination of ice, deck, fishhold and trucks such as cleanliness, proper handling of fish etc.

**Keywords:** *E.coli*, Faecal Coliform Bacteria, Fish, Multiday Boats, PCR