Identification of Possible Microbial Contamination Points in Bolla Fish (*Selar crumenophthalmus)* During Storage and Transportation from Kudawella Fish Harbour to Badulla Fish Market

R.M.M.P. Rathnayaka[1], E.K.G.P.U. Dharmarathna[2] and E.D.N.S. Abeyrathne[1]

[1]*Department of Animal Science, Uva Wellassa University, Badulla, Sri Lanka*
[2]*Department of Export Agriculture, Uva Wellassa University, Badulla, Sri Lanka*

Improper storage and transportation conditions account for the quality deterioration of fish as it begins to spoil as soon as fish die. Spoiled fish may cause infections to the consumers. Objective of this study was to identify possible microbial contamination points in Bolla fish (*Selar crumenophthalmus)* during storage and transportation from Kudawella fish harbour to Badulla fish market. Randomly collected fish samples from three control points (before transportation, before unloading and after unloading) including ice samples with three replicates have been examined for the enumeration of total aerobic bacteria, *Salmonella* and *Escherichia coli.* Before transportation, the highest total aerobic bacteria count (18.03±0.03 log CFU g^{-1}) was observed in the fish gill samples and the lowest count was observed in fish muscle samples (17.93±0.02 log CFU g^{-1}). Total aerobic bacteria count was increased during first 6 hours after unloading, in Badulla market and after 12 hours bacterial count of fish gill and muscle samples were 18.56±0.01 log CFU g^{-1} and 18.49±0.01 log CFU g^{-1} respectively. Initial total aerobic bacteria count of skin swab samples was 18.07±0.01 log CFU g^{-1} and the count increased at the fish market during last 12 hours to 18.58±0.01 log CFU g^{-1}. All fish gill and skin swab samples collected from the market after 6 and 12 hour intervals were positive for both *E. coli* and *Salmonella* and fish muscle samples were positive only for *E. coli*. Ice samples collected at Kudawella fish harbour and Badulla fish market were positive for *E. coli*. Control point examination and presence of *E. coli* revealed that fish arrived to the fishery harbour as primary contamination. Also storage conditions of ice had positive effects on microbiological quality. In conclusion, there is a requirement to initiate sufficient sanitary applications to minimize cross contaminations in fish before reaching to consumer in both fishery harbour and Badulla fish market.

Keywords: Sanitary applications, Total aerobic bacteria, *Salmonella, Escherichia coli*