

Quality assessment of *Decapterus russelli* (Indian scad) fish harvested by multi-day boats in Kudawella and Puranawella in Sri Lanka

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This study assessed the post harvest quality losses (PHQL) in Indian scad fish (*Decapterus russelli*) stored in fish holds of multi-day boats (MDBs) with ice and sea water in Southern coast. Altogether, 43 fish, 09 water and 07 ice samples were analysed from May to August in 2016. Fish were analyzed for total volatile base nitrogen (TVB-N), salt content (dry w/w %), total plate counts (TPC), *Escherichia coli* (*E.coli*), and *Salmonella* species. Sea water in harbour basin and ice used in MDBs were also analyzed for *E. coli* and *Salmonella*. Fish were categorized into 4 groups according to sensory evaluation as good (Gd-I), fair (Gd-II), poor (Gd-III) and bad (Gd-IV). The PHQL of Indian scad fish increased with the trip duration of MDBs. The percentage of PHQL of Indian scad fish in MDBs were 22%, 28% and 35% for trip durations <10, 10–19 and >20 days, respectively. The average of TVB-N in Indian scad fish were 21.2, 28.4, 27.5 and 35.7 mgN/100 g, distributed in Gd-I, Gd-II, Gd-III and Gd-IV groups, respectively. The average ranges of salt contents were 0.8–1.8, 0.9-1.6, 1.1-1.9, and 1.2-2.1%, distributed in Gd-I, Gd-II, Gd-III and Gd-IV groups, respectively. Fish belong to Grade I, II, III and Grade IV contained TPC in the range of $1.9 \times 10^4 - 9.5 \times 10^6$, $1.9 \times 10^4 - 2.3 \times 10^7$, $2.0 \times 10^4 - 3.0 \times 10^7$ and $5.0 \times 10^5 - 8.1 \times 10^6$ CFU/g, respectively. The percentages of *E.coli* detection were 46%, 54%, 77% and 50% in Gd-I, Gd-II, Gd-III and Gd-IV groups, respectively. Total *E.coli* contamination was 42% (18/43) and *Salmonella* sp. contamination was detected in Gd-II and Gd-III in three occasions. Sea water from Kudawella and Puranawella harbour basin showed high levels of *E. coli* contamination. Twenty five percentage of ice from Kudawella harbour were contaminated with *Salmonella* sp. and high levels of *E.coli*. Results of this study indicated that high levels of contaminations of fish with faecal origin pathogenic bacteria may have occurred through use of contaminated ice and harbour water in boats and upon unloading of fish at the pier in the harbour.

Keywords: Indian scad fish, *E.coli*, *Salmonella*, salt content, total volatile base nitrogen, total plate counts

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