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Assessment of Freshness of Skipjack Tuna *(Katsuwonus pelamis)* Harvested in Multi-Day Boats in Mirissa Fishery Harbour in Sri Lanka

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Skipjack tuna (ST) (*Katsuwonus pelamis*) is the main species that contribute to the inboard multi-day boats (IMDBs) catch and significant losses have been observed during the postharvest handling. This study aimed to investigate the effect of storage duration on the freshness of ST harvested by IMDBs in *Mirissa* fishery harbor. Fish samples (n=30) were collected from IMDBs and categorized as their storage period in IMDBs as 0-20 days (T1), 21-40 days (T2), and 41-60 days (T3). Further, fresh fish (C) (n=10) were collected from single-day boats. Sensory evaluation was done by 6 trained panellists. The samples were assessed microbiologically by Total Coliform Count (TCC), Faecal Coliform Count (FCC), *Escherichia coli (E. coli)*, and *Salmonella.* The Total Volatile Base Nitrogen (TVB-N), Trimethylamine (TMA), and Histamine (H) were used to assess biochemical quality. Parametric and sensory data were analyzed using ANOVA and the Kruskal-Wallis test, respectively. Sensory analysis revealed the occurrence of stale fish in T3 was significantly higher. Further, T3 recorded significantly higher parameters; TVB-N (61.20 mgN100g^{-1}), TMA (27.68 mgN100g^{-1}), H (37.70 ppm), TCC (0.36-93 MPNg^{-1}) and FCC (0-9.3MPNg^{-1}). *E. coli* counts were not different *(p>0.05)* among the treatments while *Salmonella* was absent in samples. Further, all measured parameters of T1, T2, and C fishes did not exceed the maximum permissible limits and had acceptable sensory qualities. In conclusion, fish stored for up to 40 days in IMDBs are in a fresh condition and suitable for consumption. However, proper storage management practices are required to extend the storage duration in IMDBs.

Keywords: *biochemical quality, microbiological quality, sensory quality*