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Evaluation of Freshness and Biochemical Composition of Three Major Commercial Fish Species from Harike Wetland–A Ramsar Site, India

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Abstract—*Harike wetland one of the largest freshwater wetland of Northern India, geographically it is located at 31˚13'N and 75˚12'E in Punjab State (India). The wetland is formed due to construction of barrage on the flow of water at the confluence of river Sutlej and Beas in western Punjab at Harike Pattan. Quality of three major commercial fish species i.e. Wallago attu, Labeo rohita and Channa marulius was studied during May – August, 2016; comprising summer and monsoon season, to evaluate freshness of fish landed/ marketed. Species wise C. marulius ranked most fresh followed by L. rohita while W. attu scored least freshness rank among the three fish species studied. Total Volatile Base Nitrogen (TVB-N) value ranged 7.05 to 7.15, 6.79 to 7.08 and 6.59 to 6.64 mg N 100g^{-1} in W. attu, L. rohita and C. marulius, respectively. The Total Plate Count (TPC) values ranged from 1.74x 10^{4} - 4.66 x 10^{6} and recorded maximum in W. attu (4.52 x10^{6}) and minimum in C. marulius (1.87 x10^{4}). The Most Probable Number (MPN) value ranged from 19.66 to 26.00, 18.00 to24.33 and 13.00 to 16.66 100g^{-1} in W. attu, L. rohita and C. marulius, respectively and recorded maximum in W. attu (23.16±1.45 100g^{-1}) and minimum in C. marulius (14.9±1.28 100g^{-1}). In present study, pH range of fish flesh of three species was slightly acidic, signified that fish were landed in fresh condition without any accumulation of alkaline compounds which are associated with spoilage. Total volatile base nitrogen, Total Plate Count and Most Probable Number values in flesh of W. attu, L. rohita and C. marulius recorded well below the acceptable limit and clearly indicate that fishes were fit for human consumption. Proximate composition has changed significantly among species, season and with maturity stages of fish. During the breeding season a decrease in lipid and protein content and increased moisture content observed as compared with other season.*

Keywords*: Harike wetland, fish species, freshness indicators, proximate composition.*

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