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QUANTIFICATION OF HISTAMINE IN FOUR COMMERCIAL FOOD FISH SPECIES IN FISH MARKETS IN MAHARAGAMA, SRI LANKA

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Histamine, a biogenic amine, is synthesised from histidine which can potentially cause histamine fish poisoning, depending on individual histamine intolerance. This study quantified histamine levels in four commercially important and widely consumed fish species (n = 20 each) obtained from open markets in Maharagama, Sri Lanka, including frigate tuna (*Auxis thazard*), Indian scad (*Decapterus russelli*), skipjack tuna (*Katsuwonus pelamis*), and mackerel tuna (*Euthynnus affinis)*. Histamine quantification was performed with the HPLC-DAD system. Samples were taken from the fish head, muscle, gill, gut, and tail (5 g each) for analysis. Histamine concentrations in frigate tuna (head: 13.91 ± 0.05 mg/kg, muscle: 12.91 ± 0.27 mg/kg, tail: 12.21 ± 0.40 mg/kg) and Indian scad (head: 14.37 ± 0.12 mg/kg, muscle: 13.99 ± 0.01 mg/kg, tail: not detected) decreased from head to tail. In skipjack tuna (head: 19.81 ± 0.46 mg/kg, muscle: 27.17 ± 0.63 mg/kg, tail: 24.32 ± 0.55 mg/kg) and mackerel tuna (head: 19.54 ± 0.37 mg/kg, muscle: 24.91 ± 0.16 mg/kg, tail: 22.58 ± 0.11 mg/kg). The highest histamine concentrations were detected in the gut part of all species (frigate tuna: 17.91 ± 0.24 mg/kg, Indian scad: 15.17 ± 0.04 mg/kg, skipjack tuna: 29.36 ± 0.78 mg/kg, mackerel tuna: 26.42 ± 0.47 mg/kg). Histamine was not detected in the gills of frigate tuna and Indian scad, while in skipjack tuna and mackerel tuna, gill histamine concentrations were 14.67 ± 0.32 mg/kg and 13.47 ± 0.29 mg/kg, respectively. None of the samples exceeded the 100 mg/kg threshold set by Sri Lankan regulations. Despite these threshold values, to reduce the risk associated with high histamine levels, it is advisable to remove the guts and gills of fish before consumption. Skipjack tuna, in particular, tends to have elevated histamine levels and may present a greater risk, especially for those with histamine intolerance.

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Keywords: Frigate tuna, Histamine, Indian scad, Mackerel tuna, Skipjack tuna