

A study on the level of histamine in Tuna (*Thunnus albacares*) in relation to the body size, seasonal variations and spatial variations

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By

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ABSTRACT

Histamine is a naturally occurring substance in mammalian physiology and its biological effects are usually seen only when it is released in large amounts in the course of allergic and other reactions to human. Because of that when fish processing it is chemical hazard point. Yellowfin (*Thunnus albacares*) tuna is one of hazardous species. Therefore it is important to investigate impact of size variation and spatial variation to the histamine level. Investigation time was May to July. 1200 samples were collected from four landing sites included to Negombo, Dondra, Trincomalee and Tangalle. Samples were collected from underneath pectoral fin and tail fin. Samples were analyzed by neogen histamine reader. According to one way ANOVA landing sites were affected by 57.65% to histamine level of tuna. Highest mean histamine level was recorded at (7.797 ppm) Trincomalee landing site and highest variation of histamine level is recorded at (± 3.458) Tangalle landing site. Lowest mean histamine level is recorded at (1.293 ppm) Negombo landing site. Oceanic currents, poor on board practices and poor processing practices found to affect the histamine level. Normally Asian countries like Sri Lanka have recorded high histamine levels. Each fish recommended histamine level for international level is at or below 10 ppm. According to data analysis there was no correlation with size variation (weight and standard length). The effect of size variation to histamine level was minimum. According to one way ANOVA fish seasons were affected by 47.83% to histamine level of tuna. Highest mean histamine level was recorded in (7.762 ppm) May to September and highest variation of histamine level is recorded at (± 3.755) May to September. Two years data were analyzed for that. Monsoonal conditions and oceanic current have mainly affected to this result.

Keyword: Histamine level, Yellowfin tuna (*Thunnus albacares*), spatial variation, size variation, fish season.