

**STUDY ON EFFECT OF CHEMICAL,
MICROBIOLOGICAL AND ORGANOLEPTIC
PARAMETERS RELATED TO THE FLESH
COLOUR OF YELLOWFIN TUNA**

(Thunnus albacares)

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By

**RAJAPAKSHA VITHANAGE DILINI NADEESHA
RAJAPAKSHA**

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Uva Wellassa University

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ABSTRACT

Colour of fish flesh is the most important attribute when assessing the quality and price in industry. However, marine species like yellowfin tuna are highly susceptible to rapid spoilage. So the present study was undertaken to assess the effect of flesh colour in chilled storage on the quality of fresh yellowfin tuna by studying the changes in chemical (Histamine), microbiological (TPC) parameters and sensory attributes. Flesh of fresh yellowfin tuna received from Negambo landing site were categorised as bright red colour, light red colour, brown red colour and pale brown colour at the receiving. Forty samples were selected from each colour category to analyse the histamine content and TPC value. Flesh colour is significantly influenced to the histamine value. Furthermore, the mean histamine values are 0.66 ± 0.37 ppm, 1.70 ± 1.13 ppm, 5.19 ± 4.55 ppm and 10.14 ± 6.13 ppm in bright red, light red, brown red and pale brown colours respectively. The highest mean histamine value (10.14 ppm) and the highest variation (± 6.13 ppm) was represented in pale brown colour and lowest mean histamine value (0.66 ppm) and lowest variation (± 0.37 ppm) was represented in bright red colour. The flesh colour is significantly influenced to the TPC which means the microbial count of the flesh. Furthermore, mean TPC values are 2.62 ± 0.40 log CFU/g, 3.18 ± 0.28 log CFU/g, 3.54 ± 0.31 log CFU/g and 3.85 ± 0.22 log CFU/g in bright red, light red, brown red and pale brown colours respectively. The highest mean TPC value (3.85 log CFU/g) was represented in pale brown colour and the lowest mean TPC value (2.62 log CFU/g) was represented in bright red colour. The sensory scores by thirty two untrained panellists were judged bright red colour is the best quality colour grade and pale brown colour is the least quality colour grade.

Key words: Yellowfin tuna, Histamine, Total Plate count, Colour grade, Chilled storage