

Effect of different temperatures on the free amino acids, physico-chemical and microbial changes during storage of Barramundi (*Lates calcarifer*) fillets.

Abstract

The effects of storage days and temperature on free amino acids, TVB-N, pH and microbial changes in Barramundi (*Lates calcarifer*) fillets kept at 0°C and 8°C were investigated for 20 days. At the end of the storage, significant differences were observed ($p < 0.05$) in the amino acids isoleucine, leucine, methionine, phenylalanine, valine, glutamic acid and glycine from the initial value of both storage temperatures. However, no significant difference ($p > 0.05$) between two temperatures during the storage period were observed. Among two temperatures, the psychrophiles were initially 4.07 log CFU/g and exceeded the acceptable limit of 7 log CFU/g on the 12th and 8th day at 0°C and 8°C, respectively. Although, Total Plate Count (TPC) were initially 3.7 log CFU/g and exceeded the acceptable limit of 6 log CFU/g on the 12th day in the both storage temperatures. Histamine Forming Bacteria (HFB) was significantly ($p < 0.05$) lower in Barramundi fillets storage at 0°C compared to the 8°C. Significant differences ($p < 0.05$) between the concentrations of Total Volatile Base-Nitrogen (TVB-N) in fillets kept at 0°C and 8°C were observed.

Keyword: Amino acids; Shelf-life; Total volatile base; Nitrogen (TVB-N)