

Changes in urocanic acid, histamine, putrescine and cadaverine levels in Indian mackerel (*Rastrelliger kanagurta*) during storage at different temperatures

Abstract

Histamine, putrescine, cadaverine and cis-urocanic acid (UCA) have all been implicated or suggested in scombroid fish poisoning. However, there is little information on UCA especially during storage. Changes in their contents during storage of whole Indian mackerel at 0, 3 ± 1, 10 ± 1 for up to 15 days and 23 ± 2 °C for up to 2 days were monitored. Fresh muscles contained 14.83 mg/kg trans-UCA, 2.23 mg/kg cis-UCA and 1.86 mg/kg cadaverine. Histamine and putrescine were not detected. After 15 days at 0 and 3 °C, trans-UCA content increased to 52.83 and 189.51 mg/kg, respectively, and decreased to <2 mg/kg at the other two temperatures. Storage at 10 °C also resulted in an increase in trans-UCA after 3 days, only to decrease after 6 days. The concentration of cis-UCA increased nearly 13-fold after 15 days at 0 and 3 °C, decreased at 10 °C and remained unchanged at 23 °C. Histamine, putrescine and cadaverine levels increased significantly (P value < 0.05) at all temperatures especially at 23 °C.

Keyword: Urocanic acid; Biogenic amine; Histamine; Putrescine; Cadaverine; Indian mackerel; Storage