

Title Changes of pigments and color in sardine (*Sardinella gibbosa*) and mackerel (*Rastrelliger kanagurta*) muscle during iced storage

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Abstract

Changes in pigments and color of sardine and mackerel muscles during iced storage were investigated. When the storage time increased, a gradual increase in pH was observed. The total extractable pigment and heme iron content decreased ($P < 0.05$), while the non-heme iron content tended to increase throughout storage. The sorbet band of myoglobin decreased with concomitant decrease in redness index (a^*/b^* ratio) when the storage time increased, suggesting the destruction of the heme protein. A blue shift of myoglobin, observed in both species, coincided with a slight increase in metmyoglobin content and was associated with darkening of meats caused by the oxidation of myoglobin. Myoglobin extractability of sardine and mackerel muscle with NaCl solution and distilled water during iced storage was carried out. Myoglobin was removed to a greater extent increasing washing cycle and a higher amount of myoglobin was removed from the sample washed with NaCl solution, than that washed with distilled water. Higher myoglobin removal resulted in a lower redness index of washed mince. Therefore, myoglobin extracting efficiency depended on fish species, muscle type, storage time and washing process.