

The manner of urocanic acid accumulation in fish by tracking histidine ammonia lyase activity during storage of vacuum-packed, eviscerated, and whole fish

ABSTRACT

Accumulation of urocanic acid (UCA) in stored fish has been attributed to both endogenous and exogenous histidine ammonia lyase (HAL) activity. The level of HAL in Indian mackerel, tuna, and sardine were monitored at different temperatures. It was also evaluated during storage of eviscerated and whole fish under vacuum packaging. UCA production in sardine was also evaluated during storage. The highest and the lowest activity of HAL in fresh fish was observed in Indian mackerel and tuna (26.32 and 9.94 Unit/g, respectively). Endogenous HAL was the main agent of UCA accumulation at 0°C while it was not the only effective factor. The main agent of UCA accumulation in fish depended on the kind of fish which was important during long storage at low temperatures. Results also indicated that unlike evisceration, vacuum packaging was effective on decrease and control of HAL content during storage of fish.