

Spoilage pattern and keeping quality of Tilapia species stored in iced chilled and frozen condition

The cultured Tilapia production in Sri Lanka has increased during the past. The International trade in Tilapia is growing steadily in Taiwan, Indonesia, Thailand, USA and Japan. Tilapia is mainly exported in the whole frozen form and as frozen fillets. Fish yields in reservoirs in Sri Lanka have increased dramatically after the introduction of Tilapia. The keeping quality of Tilapia was assessed in iced (0 °C), Chilled (-5°0) and frozen conditions (-18 °C).

The Tilapia used for storage studies were collected from Udawalewa reservoir into pre sterilized bags and transported to the laboratory. Samples were analyzed within 24 hours interval after collection. Shelf life was determined by evaluating TBC (Total Bacterial Counts), TVN (Total Volatile Nitrogen), and TMA (try Methyl Ammonia), and PH. Overall acceptability was evaluated using characteristics with the help of trained taste panelists.

Tilapia showed a shelflife of 19 days in ice, 15 days in chilled condition and more than six months in frozen condition. According to the quality parameters monitored, at the time of rejection TBC counts reached $9.8 \times 10^6/g$ and $9.6 \times 10^6/g$ in iced and chilled condition respectively. The TVN values recorded were 8.9 mg/100 g and 55.36 mg/100g in iced and chilled respectively and organoleptic quality score was around 2 for both. In the frozen Tilapia, TBC was $3 \times 10^3/g$ and TVN was 56mg/100g after 169 days. Frozen condition delayed the multiplication of bacteria to reach the rejection level (10^6) by 150 & 157 days when compared to iced and chilled condition respectively. The initial TBC counts were 2×10^2 .