

QUALITY CHANGES IN TILAPIA (OREOCHROMIS NILOTICUS) AFTER  
DELAYED ICING AND SUBSEQUENT STORAGE IN ICE

Fathma Saluan-Abduhasan

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Fathma Saluan-Abduhasan  
Master of Science in Fisheries, April 1985

(B.S., MSU - Tawi-Tawi College of  
Technology and Oceanography, 1977)  
(M.S., University of the Philippines, 1985)

ABSTRACT

Quality changes in tilapia (Oreochromis niloticus) iced directly on harvesting were compared to those occurring when icing was delayed. Chemical and sensory examinations showed that the shelf life of tilapia was 26 days when iced immediately, 20 days and 16 days with 4 and 8 hours delay, respectively. Fish kept at ambient temperature for 12 hours were rejected after one day in ice. These results suggest that for every hour delay in icing the effective shelf life is reduced by approximately one day up to the 8th hour delay. Total volatile nitrogen values increased with storage time. Likewise,

K-value and hypoxanthine values increased as storage time increased. The initial bacterial load ranged from  $10^3$ -  $10^4$  cfu/g of fish with H<sub>2</sub>S-producers count of less than 100 cfu/g of fish. At rejection, the microbial load was  $10^8$ - $10^9$  cfu/g of fish with H<sub>2</sub>S-producers count of  $10^6$ - $10^7$  cfu/g.

The typical off odours of naturally spoiling fish have been reproduced in blocks of sterile muscle by organisms such as Alteromonas putrefaciens, Pseudomonas sp., Pseudomonas maltophilia, Pseudomonas fluorescens and Pseudomonas stutzeri.