

Title Effect of pre-freezing icing duration on quality changes in frozen Nile perch (*Lates niloticus*)
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Abstract

Deterioration of fish during frozen storage entails change in texture, loss of protein functionality, lipid hydrolysis as well as biochemical changes. These changes were monitored in Nile perch frozen after 3, 6, 9, 12, 24, 48 and 72 h on ice, with the aim of establishing the effect of pre-freezing icing on deterioration of fish during frozen storage. During the icing duration, the expressible moisture (EM) was found to reduce while protein solubility (PS), thiobarbituric acid (TBA), trimethylamine (TMA), hypoxanthine (Hx), and free fatty acids (FFA) concentration increased. During frozen storage, PS decreased while EM was found to increase. Hx, TBA and FFA increased, while texture was found to deteriorate. TMA remained constant during frozen storage. The extent of texture deterioration was correlated negatively to PS and positively to EM. It was concluded that holding fish on ice for about 9 h deterred the negative changes that occur during frozen storage.