

Effect of Ice Storage of Fresh Tilapia (*Oreochromis niloticus*) on Physical, Biochemical and Bacteriological Characteristics at Refrigerated Temperature and at Ambient Temperature

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Abstract: The storage life of fresh Nile tilapia during ice storage at refrigerated temperature and ice storage at ambient temperature were studied in terms of organoleptic, biochemical, microbiological and physical changes. The storage life of the fresh fish was 6 days in ice at refrigerated temperature and 36 to 48 hrs in ice at ambient temperature. The organoleptic acceptability limit was 6 days in ice stored fish at refrigerated temperature and 36 hours in ice stored fish at ambient temperature. The pH value gradually increased from initial 6.34 to 6.73 at the end of 7 days of ice stored fish at refrigerated temperature, while 6.78 at the end of 2 days of ice stored fish at ambient temperature. TVBN and Total Plate count (TPC) level was correlated with organoleptic assessment. TVBN value increased from 4.57 and reached 35.65mg N/100g at the end of 7 days of fish storage in cold store while the TVBN level of ice stored fish at ambient temperature reached to 36.37mg N/100g at the end of 48 hours. The TPC exceeded $7 \log \text{cfu g}^{-1}$ after 6 days and at the end of 2 days of the fish stored with ice in cold store and the fish stored with ice at ambient temperature respectively. The results of peroxide value (PV) and thiobarbituric acid (TBA) did not support those of organoleptic assessment, TVBN and TPC. The parameters of color viz. lightness (L), redness (a), yellowness (b), color intensity difference (ΔC^*) and total color difference (ΔE^*) significantly changed ($p < 0.05$) in the both conditions of storage.