

EFFECT OF LIPID PEROXIDATION ON PROTEIN QUALITY OF SNAKEHEAD FISH (*CHANNA STRIATA*) STORED AT -10°C FOR 28 DAYS

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The experiment was conducted to determine the progression of lipid peroxidation and the effects of it on protein quality of Snakehead fish (*Channa striata*) stored at -10 °C for 28 days. Fish were harvested from Victoria reservoir and transported to the laboratory under ice. After removal of skin, epaxial muscles were taken, wrapped in aluminum foil, sealed in polythene sacs, and stored at -10 °C until used. The samples were evaluated for Thiobarbituric Acid Reactive Substances (TBARS) using distillation method as peroxidative index while Salt Soluble Protein (SSP) content was determined as an index of protein quality deterioration on day 0, 7, 14, 21 and 28. The experiment was repeated six times each with three replicates and the data were expressed as mean ± SEM.

The day 0 value of TBARS in each experiment varied from 0.4236± 0.03875 mg/ kg to 1.2057 ±0.0915 mg/ kg. This difference might be due to individual variations of fat content in each fish. However, there was a significant ($P < 0.05$) increase of TBARS in each experiment during 28 day storage period from 0.5971±0.0413 to 1.751±0.119 mg/ kg.

On the other hand, SSP contents decreased gradually from day 0 (8.078 ± 0.503 mg/ g) to day 28 (2.19 ± 0.253 mg/ g) and found to be significant ($P < 0.05$). Further, there was a significant negative co-relation ($R^2 > 0.8$) between variation of TBARS and SSP contents.

Increment of TBARS contents indicates continuous peroxidation of lipids in Snakehead fish stored at -10 °C for 28 days. Reduction of SSP indicates gradual deterioration of muscle protein quality. The negative co-relation between two parameters demonstrated deleterious effect of peroxidation on protein quality. However, the TBAR content did not exceed the maximum permissible level (4.5 mg/ kg) even on day 28 at -10 °C indicating the safety of Snakehead fish consumption.