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**Title:** Shelf-life of ready-to-cook (RTC) hilsa fish ball under modified atmosphere packaging at refrigerated (4˚C) storage condition

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**Abstract:** (The body of the abstract should be typed single-spaced in 11-point type Times New Roman. The abstract should not be longer than 300 words.]

Modified atmosphere packaging (MAP) is a widely used packaging technique for displaying chilled fish and its products in developed countries. In light of this, the shelf-life of ready-to-cook (RTC) hilsa fish ball was evaluated by biochemical and microbiological analysis under not sealed pack (control), MAP-1 (50% CO2 & 50% N2) and MAP-2 (40% CO2 & 30 N2 & 30% O2) pack at 5 days interval during 20 days of storage at 4°C. The pH value of hilsa fish ball was in the range of 5.85 to 6.28. The total volatile base nitrogen (TVB-N) value gradually increased with the storage time. However, there were no significant (p<0.05) differences in pH and TVBN values among the three packaging conditions at each of the storage days. Thiobarbituric acid reactive substances (TBARS) fluctuated between 1.13 to 4.84 mg malonaldehyde/Kg during the storage period. Significantly (p<0.05) lower TBARS values were observed in MAP-1 sample on 10th, 15th and 20th day of storage compared to the control and MAP-2 samples. The pH and TVB-N values of the samples under all packaging conditions were within the acceptable limit during the storage period. The aerobic plate count (APC) gradually increased from the initial value of 4.08 log CFU/g with time in all packaging conditions. However, significantly (p<0.05) lower APC was observed on the 10th, 15th and 20th day of storage in all samples compared to the control sample. Considering the bacterial counts, the shelf-life was determined at approximately 10 days for not sealed pack, 17 days for MAP-1, and 15 days for MAP-2 sample, based on the 6 logs CFU/g, which is considered as the acceptable limit for ready-to-eat fishery products. Therefore, the MAP-1 (50%CO2 & 50%N2) is the best packaging, which can be utilized by the superstores to display hilsa fish ball with extended shelf life.

**Keywords:** (maximum 5) Hilsa fish, Fish ball, MAP, Shelf-life

**Preferred conf. session:** (delete as appropriate)

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