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**Development of ready to eat Indian mackerel curry (*Rastrelliger kanagurta*) in semi rigid containers using water spray retort**

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A study was conducted to develop ready to eat Indian mackerel curry in semi rigid containers having very good barrier properties. The effect of thermal processing on the shelf life of the product was investigated. The ready to eat Indian mackerel curry was processed in a still water spray retort to an  $F_0$  value of 8.94 minutes. Heat penetration characteristics were studied from the time temperature profile obtained during processing. The recorded data was analyzed and heat penetration data were plotted on a log paper with temperature deficit (retort temperature–core temperature) against time. Lag factor for heating ( $J_h$ ), slope of the heating curve ( $f_h$ ), initial temperature deficit ( $I$ ), final temperature deficit ( $g$ ), time in minutes for sterilization at retort temperature ( $U$ ) and lag factor for cooling ( $J_c$ ) were determined. The Ball's process time ( $B$ ) and total process time ( $T$ ) was determined. The thermally processed mackerel curry was stored at ambient temperature ( $28 \pm 2^\circ\text{C}$ ) and analysed for changes in biochemical, textural and sensorial characteristics for a period of 14 months. Microbiological analysis performed showed that the product was commercially sterile. The biochemical parameters like TVBN, TMA, and TBA showed an increase during the period of storage but was within the limits for 14 months of storage. The TVB-

N and TMA values were 14 mg% and 1.4 mg% respectively in the 1<sup>st</sup> month which increased to 34.7 mg% and 14.05 mg% respectively in the 14<sup>th</sup> month of storage. The product was accepted by the sensory panel upto a period of 14 months with an overall acceptability score of 8.5 during the 1<sup>st</sup> month, which decreased to 4.5 in the 14<sup>th</sup> month.

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**Shelf life extension of tuna fillets by gelatin and chitosan based edible coating incorporated with clove oil**

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Bioactive edible coating (BEC) solutions were prepared from gelatin (1%) and chitosan (1%) incorporated with different concentrations of clove oil (1-5%) and evaluated as a natural preservative for improving the shelf life of tuna fillets. The antibacterial activity of the BEC solution was tested against 11 fish spoilage and fish-borne bacteria by agar well diffusion method and minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) were determined. Gram positive bacteria were susceptible than gram negative bacteria. Among all the tested bacteria, *B. cereus* and *S. aureus* were the most sensitive to BEC solutions. Changes in APC, TBARS, TVB-N and sensory values were studied in tuna fillets dipped in BEC solutions with different concentrations viz. 1% acetic acid, 1% chitosan (C), 1% gelatin + 1% clove oil (GC), 1% chitosan + 1% clove