Tunas are highly sought after seafood commodity across the globe in different forms. Thermal processed tuna is highly preferred by the consumers due to its characteristic taste and flavor. Although thermal processing of tuna is a highly established industry, the process conditions are reviving with advancements in research to reduce process time and improve the nutritional quality. The present study was undertaken to assess the effect of heating medium and containers on the heat penetration characteristics of Yellowfin tuna in water. Equal quantity of tuna and filling medium packed in retortable pouch and TFS can were processed at 121.1^{0}C to an F_o value of 10 min using different heating medium viz., steam-air, water spray and water immersion. Various process parameters were compared. Come up time varied between 3 to 8 min. Lag factor for heating (J_h) was least for tuna packed in can and processed using water spray, which resulted in least process time. Cook value was least for tuna packed in can and processed in steam-air retort (88.83 min) and highest for tuna packed in retortable pouches and processed in water immersion retort (115.7 min). Among the containers process time was least for metal cans and among heating medium, it was least for steam-air. A reduction of 17.21, 11.07 and 9.36% in process time was observed for metal containers processed in water immersion, steam-air and water spray mediums, respectively.

AV PO 15

An innovative 3D printing technology based mould for shrimp analogue product

K. HEMA[1]*, C.O. MOHAN[2], P. VELAYUTHAM[1], D. SUKUMAR[3], B. SUNDARAMOORTHY[1], S. ATHITHAN[1], K. ASHOK KUMAR[2], C.N. RAVISHANKAR[4]

[1]Fisheries College and Research Institute, Thoothukudi, Tamil Nadu, India; [2]ICAR-Central Institute of Fisheries Technology, Kochi, Kerala, India; [3]Directorate of Post-Harvest Technology, Madhsavaram campus, Chennai, Tamil Nadu, India; [4]ICAR-Central Institute of Fisheries Technology, Kochi, Kerala, India; **vathi.hema79@gmail.com*

An innovative technology, 3D printing is widely used in many fields widely as it permits layer-by-layer construction of a structure directly from a 3D computer drawing without human intervention. In food, 3D printing is very advantageous as it allows the fabrication of food products using wide variety of ingredients. Analogue products are highly sought after food as they imitate highly priced food commodities with modified texture and taste. The present study aimed to develop a 3D print based shrimp mould for developing shrimp analogue product from low value fish, lizard fish (*Saurida thumbil*). For this Fused Filament Fabrication 3D modelling technique was used for developing shrimp analogue mould using bioplastic, polylactic acid (PLA). The developed mould was used to prepare shrimp analogue product using optimized combination of ingredients. Heating medium (water bath, steam retort, steam autoclave) and temperature (90, 95 and 100^{o}C for 20 min) was used to optimize the setting conditions. The results indicated that PLA mould prepared using 3D printing technology is a cost effective device for developing shrimp analogue products. Heating in steam retort at 90^{o}C for 20 min resulted in better product compared to other setting conditions.

AV PO 16

Effect of High Pressure Processing on the quality of protein isolates extracted