

surimi made from acid solubilization with 32.89 and 28.5 for surimi prepared from alkaline method. Recovery of myofibrillar proteins was significantly higher in alkali-solubilized surimi with 68% yield, acid processed surimi with 61% and conventional surimi with 56% yield. Among the three methods, the conventional surimi had greater gel strength but the surimi prepared from acid- and alkali-extraction methods had good gel forming ability.

AV PO 04

Nutritional quality characteristics of commercially important finfish and shellfish of the Gulf of Mannar Coast

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The present investigation deals with the assessment of nutritional quality characteristics of commercially important finfish and shellfish of the Gulf of Mannar coast. Three fish landing centres namely, Thoothukudi (Station-1), Keelakarai (Station-2) and Veerapandianpattinam (Station-3) were selected and commercially important fish samples were collected for proximate composition analysis. Two fish species from each category viz. pelagic (*Sardinella longiceps* and *Selaroides leptolepis*), demersal (*Epinephelus quoyanus* and *Lethrinus lentjen*) and bottom (*Penaeus semisulcatus* and *Portunus sanguinolentus*) were used for the present study. Totally six samples were collected periodically from October 2012 to March 2013 to assess the proximate composition. The proximate composition of fish samples were analysed

by adopting the standard procedure. Among three landing centres, the highest value of moisture (81.73%) was observed in *P. sanguinolentus* followed by *E. quoyanus* (78.52%), *L. lentjen* (78.51%), *P. semisulcatus* (78.08%), *S. leptolepis* (77.73%) and *S. longiceps* (74.73%). The maximum value of crude protein (19.77%) was recorded in *S. leptolepis* followed by *P. semisulcatus* (19.42%), *E. quoyanus* (18.91%), *L. lentjen* (18.79%), *S. longiceps* (16.92) and *P. sanguinolentus* (16.90%). Similarly, the highest value of crude fat (6.87%) was recorded in *S. longiceps* followed by *P. semisulcatus* (0.62%), *L. lentjen* (0.49%), *S. leptolepis* (0.47%), *E. quoyanus* (0.45%) and *P. sanguinolentus* (0.36%). Ash and carbohydrate content did not show much variation in all the fish analysed.

AV PO 05

Squilla protein hydrolysate: In-vitro antioxidant properties and evaluation of antioxidant activity in fish nuggets

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Protein hydrolysates were prepared from *Squilla* using five proteases namely alcalase, neutrase, flavourzyme, papain and pepsin. Yield of hydrolysates ranged from 4.46 to 6.53% and protein content ranged from 69.69±1.00 to 82.80±3.93%. Highest protein content was found in hydrolysate made using pepsin. At the optimum condition, DH % was found to be 17.75, 12.13, 17.63, 26.19 and 13.03% for alcalase, neutrase, flavourzyme, papain and pepsin,

respectively. DPPH free radical-scavenging assay, reducing power assay and ABTS^{•+} Scavenging activity were used to evaluate the antioxidant properties of hydrolysates from squilla. Study revealed that hydrolysate produced using alcalase had significantly higher antioxidant properties. Hydrolysates produced using alcalase was found to have higher scavenging ability ($75.46 \pm 0.012\%$) followed by pepsin, papain, neutrase and flavourzyme. Hydrolysate produced using different type of protease from squilla exhibited strong ABTS^{•+} scavenging capacities. Evaluation of in-vivo antioxidant activity of squilla protein hydrolysate was conducted in fish nuggets under refrigerated storage. Fish nuggets with 1% squilla protein hydrolysate made from alcalase and flavourzyme showed significantly lower PV and TBARS values as compared to control sample at the end of 10 days of storage. Sensory scores for appearance, colour, flavor, odour, taste and texture were found to be higher for the fish nuggets containing hydrolysate. The results of the study indicate that squilla protein hydrolysate is a promising alternative to replace harmful synthetic antioxidants in fishery products.

AV PO 06

Innovative product development using pangasius (*Pangasianodon hypophthalmus*) fish mince

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Innovative fish products have the potential to attract consumer appeal and increase product consumption. *Pangasianodon hypophthalmus* is a widely cultured fish in

India. It has relatively lower market price and offers new scope for innovative value addition as its meat has good nutritional qualities and excellent sensory properties. A few novel value added products were prepared from pangasius mince namely, colored noodles, sausages, nuggets. Pangasius fish sausage was prepared with a standard formulation of salt (2.5%), sugar (1.5%), poly phosphate (0.2%), guar gum (0.1%), corn starch (9%) and sunflower oil (6.7%) as ingredients to the pangasius mince (70%). The sausage was found to have excellent physicochemical properties. Noodles are the most demanded fast food all over the world. Noodles from pangasius mince (20%) were developed with and without the addition of natural color pigments from beetroot. Beetroot-pangasius-fish noodles appeared reddish in colour with a* value of 18. A protocol has been standardized for preparing restructured nuggets from pangasius fish with the addition of green mussel mince. Green mussel mince @5, 10 and 15% were added to pangasius mince and the product with 10% mussel mince and 75% pangasius mince was found better acceptable. Addition of green mussel mince has masked the fatty odour of pangasius mince. The trials revealed that novel mince based products of high sensory acceptability can be prepared from pangasius mince.

AV PO 07

Fish fortified pasta from Bombay duck (*Harpodon nehereus*) and its quality characteristics

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