

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 trails 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 (*Harporodon nehereus*) and its quality characteristics

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Seafood is perceived as an excellent source of nutrients especially quality protein which is characteristically tender and easily digestible. Pasta products, being one of the most popular and widely consumed foods globally are the ideal sources for incorporating marine functional ingredients to reach the target population. Judicious formulation of ingredients in pasta helps to cut down the calorie making it more nutritious. Hence a study was carried out to develop fish pasta from Bombay duck (*Harpodon nehereus*) by cold extrusion method. Wheat and refined wheat flour (1:1) were the basic ingredients and fish mince was added at different levels viz., 5, 10, 20 and 30% for pasta preparation. Pasta with no added fish mince was used as control. Influence of the ingredients on the physical, cooking and sensory properties of fish pasta was studied. Moisture content of dried pasta ranged from 8-10%. An increase in protein and ash contents were observed with increased fish mince incorporation in pasta. Cooking properties viz., cooking time, cooking loss and cook weight was directly related to the levels of fish mince in pasta. The texture of the samples were also influenced by the levels of fish mince in pasta as indicated by a decrease in hardness and chewiness as well as shear strength with increase in fish mince levels in samples. Textural and sensory properties of pasta revealed a fish mince level of 5% as desirable and mouth feel of the product was affected beyond this concentration.

AV PO 08

Effect of fish protein hydrolysate and MAP on the quality characteristics and stability of chicken cutlet

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Fish protein hydrolysate (FPH) was incorporated in chicken cutlet to study the effect on quality aspects and storage stability of chicken cutlet. The experiment was conducted in 4 lots of various percentage of FPH on chicken meat at 0%, 5%, 10% and 15%, respectively. Cooking parameters of chicken which included cooking yield and cooking loss was studied. It was observed that with 15% FPH on chicken gave a better cooking yield of 63.64 ± 0.08 and a lower cooking loss of 36.55 ± 0.53 with respect to that of control. Based on the cooking properties, 15% FPH was used for the formulation of chicken cutlet with various binder and chicken combination (60% chicken and 40% potato, 70% chicken and 30% potato, 80% chicken and 20% potato) for the optimization of the blend. It was found that a combination of 70% chicken and 30% binder exhibited low oil uptake, minimum shrinkage, optimum pH, and Over Acceptability (OA) during sensory evaluation. Finally the optimised combination of 70:30 was used to prepare the chicken cutlet and analysed for the storage stability by subjecting to MAP and normal packaging at 2°C. It was observed that the oxidative parameters such as PV and TBARS was lower for the samples which was given MAP than the samples stored under normal packaging. Overall acceptability also scored highest for the samples which was given MAP. Hence, it can be concluded that FPH exerts a positive impact on storage stability and quality parameters of chicken cutlet. This study indicates the potential use of FPH as an additive to enhance cooking yield, improve the frying characteristics and