

to use viscosity as freshness indicator could be a possible option.

AV PO 18

Effect of commercial additives on the quality of cuttlefish (*Sepia pharaonis*) under refrigerated condition

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Cephalopod is an important seafood variety exported from Gujarat, which contributes 8.81% of total marine landing in Gujarat. In cephalopods, cuttlefish are exported as frozen block or IQF product. The present work was intended to study the effect of commercial additive on the quality of cuttlefish (*sepia pharaonis*) under refrigerated storage condition. Samples were segregated into four lots viz. treated with salt (SP), with commercial additive hidramor-4 (EP), with salt and additive (ES) and the untreated (CF) to serve as control. The samples were frozen in Individual Quick Freezer consequently packed in multilayer film of EVOH pouches and held in refrigerated (5±1^oC) for further study. Samples were periodically analysed for the changes in sensory, biochemical and microbiological quality characteristics on day 1, 3, 6 and 9 under refrigerated storage condition. The initial TVBN and TMA values were 2.7- 3.0 mg/100 g and 1.7-2.0 mg/100 g respectively, and it increased progressively in all the samples with the time of storage. Total plate count, Enterobacteriaceae, H₂S producing bacteria and *pseudomonas* sp were analysed during storage. The initial count of Enterobacteriaceae, H₂S producing bacteria and *pseudomonas* sp. were 3.4-4

log for treated samples. This study revealed that additive increased the weight gain, tenderness compared to salt and untreated samples and it not influence in the shelf life during refrigerated storage.

AV PO 19

Biochemical quality assessment of commercially available dried fishes of Gujarat

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Biochemical quality of dry fish samples of Eel (*Congresox talabon*), Croaker (*Otolithes cuvieri*), Gold spotted anchovy (*Coilia dussumieri*), Bombay duck (*Harpodon nehereus*), Greater lizard fish (*Saurida tumbil*), Ribbon fish (*Lepturacanthus savala*), Horse Mackerel (*Megalaspis cordyla*) and Cat fish (*Arius dussumieri*) traditionally sun dried were collected from Veraval fish market, Gujarat during March to June, 2016. The biochemical quality parameter such as thiobarbituric acid (TBA), tri-methyl amine (TMA), total volatile base nitrogen (TVBN), free fatty acid (FFA), pH and moisture content were analysed as indices of spoilage. The pH and moisture content of the samples were ranged from 5.49 to 6.92 and 9.47 to 31.92%, respectively. The TBA values of the dry fish samples varied between 1.68 to 25.94 mg/malonaldehyde and all the samples had more than 2 mg of TBA number except for Greater lizard fish. The TMA (mg%) values were found high (more than 15%) in all the dried fish samples except cat fish (13.33). The TVBN values of the samples varied between 25.89 to 128.34

mg 100g⁻¹ whereas >100mg% were found in Gold spotted anchovy, Bombay duck, Greater lizard fish and Mackerel. The % FFA values among the dry fish samples were ranged between 0.46 to 13.58%. The study shows that the biochemical quality of the dry fish samples prepared under traditional sun drying condition were in good quality at the initial period of processing but good packaging and storage condition should be maintained till reach the consumers as well to maintain the shelf life of the dry fish.

AV PO 20

Utilization of isoelectric precipitation /solubilisation (IEP) technology as a tool for the recovery of fish protein isolate (FPI) from seafood processing waste

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N*emipterus japonicus* (thread fin bream) is an important seafood variety used in surimi manufacturing as a raw material. During surimi production, large quantity of waste is generated in the form of head, frames, viscera etc. These portions contain high quantity of recoverable protein, which could be utilized for by product development. This work aims at evaluating the isoelectric solubilization/ precipitation (IEP) technique as a method to isolate and recover proteins from the surimi processing waste thereby increasing its potential to be used as a food/feed supplement. ISP technique allows the protein to get soluble in water by the addition of alkaline / acidic ions, inducing the protein-water bond. By this method protein could be

isolated with good functional and nutritional properties. The alkali aided process extracted the fish protein isolate (FPI) efficiently with a yield of 84%. The highest protein yield was recorded at the minced sample to extraction medium ratio of 1:9. The maximum protein content was found at pH 13 with 19.63% yield. FPI extracted had a higher percentage protein and less ash and lipid content compared to the fillet waste. The mean yield and protein composition of FPI extracted at different treatments were statistically compared with the parameters such as water ratio and pH using SPSS, which showed that the average yield was significant to the pH and water ratio at $p < 0.05$, giving the inference that water 1:9 and pH 13 is the better combination of extraction FPI from thread fin bream filleting waste. Thus, the isoelectric solubilization/ precipitation (IEP) process therefore has a potential for post process valorization of surimi processing waste by extracting high quality FPI which could be utilized for further value addition.

AV PO 21

Preliminary screening and process standardization of edible sausage casing from fish viscera

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Sausage is a popular processed meat product, traditionally consists of chopped meat and spices which are stuffed into natural or artificial casings prior to cooking. Fish viscera is rich in protein components and it can be utilized for the preparation of natural sausage casing which serve as an alternative to waste management. A study was conducted on preliminary screening of