

AV PO 27

**Retort processing of Malabar style
curry from cage cultured tilapia,
*Oreochromis niloticus***

ANUJ KUMAR*, AMMU DINAKARAN, PANKAJ
KISHORE, C.O. MOHAN, P.K. BINSI, K. ASHOK
KUMAR

ICAR-Central Institute of Fisheries Technology, Kochi, Kerala,
India; *anuj19.ak@gmail.com

Cage culture of tilapia (*Oreochromis niloticus*) is an upcoming technology targeted to increase the production. The high production necessitates the development of better post-harvest practices for efficient use of tilapia. To improve the utilization, retort processed ready to eat (RTE) Malabar style curry was prepared using fried and non-fried tilapia and the thermal process characteristics along with sensory and microbiological parameters were studied. The come up time (CUT) for the steam retort was observed to be 3 min. The non-fried and fried tilapia were sterilized to the lethality values (F_0) of 8.78 and 10.11, respectively. The heating and cooling lag factors for fried tilapia curry (1.44 and 1.32) were markedly different from non-fried tilapia curry (1.26 and 1.01). The Ball's process time for fried tilapia curry (58 min) was found to be higher compared to non-fried tilapia curry (44 min). Both the products were found to be commercially sterile. Sensorily, both fried and non-fried tilapia in RTE form were accepted by the panellists.

AV PO 28

**Effect of sodium metabisulphite on
properties of seaweed supplemented
biscuits**

BITTY BABU¹, ANUJ KUMAR^{2*}, K. ELAVARASAN²,
C.S.TEJPAL², S.K. PANDA², K. ASHOK KUMAR²,
SUSEELA MATHEW²

¹Freeze Drying and Animal Product Department, Defence Food
Research Laboratory, Mysuru, India; ²ICAR-Central Institute of
Fisheries Technology, Matsyapuri, Kochi, Kerala, India
*anuj19.ak@gmail.com

Biscuits are popular snack food that are consumed worldwide in various forms and flavors. These offers an attractive mode to make functional and health foods. Sea grapes (*Caulerpa racemosa*) a nutritive seaweed-supplemented semi-sweet biscuits were prepared to enhance the health promoting attributes. To improve the textural attributes of seaweed biscuits, the flour was treated with sodium metabisulphite (SMB) and its effects on biscuit properties were observed. Addition of seaweed in the flour increased the water and oil absorption capacity. SMB treatment increased the sulfhydryl group concentration in the dough. A decrease in L^* (lightness/ darkness) value and increase in a^* (redness/ greenness) and b^* (yellowness/ blueness) values of biscuits was noticed with increasing SMB concentration. Further, treatment with SMB decreased the thickness and weight of the biscuits. Break strength of the biscuits decreased significantly with SMB addition, without negatively affecting the sensorial properties. Overall sensory acceptability score of the biscuits lied in 'liked moderately' to 'liked very much' range of 9-point Hedonic scale.

AV PO 29

**Effect of ice storage on quality of
Bombay duck and Japanese threadfin
bream with special reference to their
pictorial presentation**

L. NARASIMHA MURTHY*, GIRIJA G. PHADKE,
SANJAY K. CHANDRAVANSHI



Indian Fisheries and
Aquaculture Forum

11th IFAF, November 21-24, 2017, Book of Abstracts

ICAR-Mumbai Research Centre of Central Institute of Fisheries
Technology, Vashi, Navi Mumbai, Maharashtra, India;
*murthycift@gmail.com

Bombay duck (*Harpodon nehereus*) and Japanese threadfin bream (*Nemipterus japonicus*) caught off Mumbai region were evaluated for their pictorial, sensory, biochemical and microbiological quality parameters during storage in ice. Overall appearance of Bombay duck fish changed from bright skin with shiny lustrous coloration to discoloured, with detached head and belly burst from day one to day 13 in ice storage. Japanese threadfin bream exhibited changes in overall appearance from bright pinkish skin with clear distinction between dorsal and ventral side on day 1 to discoloured skin and distended belly region with burst on day 13 in ice storage. Remarkable changes in colour and structure of eyes of both the fish were observed during ice storage. Proximate composition of Bombay duck fish showed moisture, crude protein, crude fat and total ash content of 88.06 ± 0.01 , 10.18 ± 0.23 , 0.81 ± 0.02 and $0.86 \pm 0.02\%$ respectively on wet weight basis. *Nemipterus japonicus* exhibited moisture, crude protein, crude fat and total ash content of 77.51 ± 0.01 , 17.96 ± 0.08 , 2.02 ± 0.00 and $1.74 \pm 0.15\%$ respectively. Increasing trend was observed in biochemical and microbiological quality parameters during ice storage in both the fish species. Psychrophilic aerobic plate count of both the fish species reached to unacceptable level at the end of 13 days of storage in ice. Based on the pictorial presentation, both the species had a shelf-life of 13 days in ice.

AV PO 30

Valorization of fish visceral waste for proteases production and their application in destaining

L. NARASIMHA MURTHY*, GIRIJA G. PHADKE,
SANJAY K. CHANDRAVANSHI, PRIYANKA S.
VICHARE, JEYAKUMARI ANNAMALAI

ICAR-Mumbai Research Centre of Central Institute of Fisheries
Technology, Navi Mumbai, Maharashtra, India;
*murthycift@gmail.com

Fish processing operations generate large amount of waste in the form of viscera which accounts for nearly 5-8% of the total weight of fish. Fish visceral waste is usually discarded which create environmental pollution. It is considered as a good source of enzymes including proteases. In the same line, crude proteases were extracted from species belonging to three different habitats namely; catla (from fresh water), little tuna (from marine waters) and tilapia (from wild habitat). The proteases were further evaluated for their proteolytic activity and partially purified using various precipitation techniques (acetone, ethanol and ammonium sulfate fractional precipitation). Higher specific activity of 18.19 U/mg was observed in little tuna proteases. Recovery was higher in acetone precipitated catla proteases (31.18%) among the three different fish species. Based on higher proteolytic activity, crude proteases from little tuna were further selected for their application in destaining of blood stains. It was observed that, tuna crude protease extract effectively removed blood stains of fish blood and chicken blood in the period of 20 minutes and the he-goat blood stains were effectively removed within 10 minutes without usage of detergent. Sheep blood stain was effectively removed within 15 minutes and she-goat stain was effectively removed in 10 minutes treatment time with crude enzyme extract. The rate of stain removal was found to be higher for crude protease extracts without further purification and could be used as a destaining agent in detergent applications.