

AV OR 08

**Effects of egg white and sodium ascorbate on gelation properties of lesser sardine (*Sardinella fimbriata*) surimi**

SANNA SHAH, S.B. PATANGE\*, J.M. KOLI, S.T. SHARANGDHAR

College of Fisheries, Ratnagiri, Maharashtra, India; \*patange29@gmail.com

Surimi is a stabilized myofibrillar protein concentrate that has been blended with cryoprotectants for a longer frozen storage life. The effects of egg white powder (EWP) and sodium ascorbate (SA); both individually and in combination at different levels on the gelation and sensory properties of gels from lesser sardine (*Sardinella fimbriata*) surimi were investigated. The addition of EWP and SA affected both the sensory and colour characteristics of gels prepared from the fish surimi. EWP was added at 0.5%, 1%, 1.5%, SA was added at 0.1%, 0.2% and 0.3% and the combinations of EWP and SA were: 0.5% EWP with 0.1 and 0.2% SA and 1% EWP with 0.1 and 0.2% SA. Quality characteristics of the resulting surimi gel were analysed. The test samples were tested for gel strength and whiteness. The addition of EWP significantly increased the gel strength ( $P>0.05$ ) over the values of surimi samples without EWP. The gel strength values at 0.5%, 1%, and 1.5% were 982 g/cm, 1281 g/cm and 1560 g/cm respectively, which showed a 20-fold increase over the control samples (69 g/cm). However, addition of EWP and SA had no effect on whiteness ( $p>0.05$ ) of surimi samples compared to EWP. Addition of SA at the levels of 0.1%, 0.2% and 0.3% showed noticeably lesser values of gel strength than EWP. Among the combinations of EWP and SA evaluated at 0.5% EWP+0.1% SA, 0.5% EWP+0.2% SA,

1% EWP+0.1% SA and 1% EWP+0.2% SA for gel strength; significantly higher values were observed for sample with 0.5% EWP+0.2% SA. There was decrease in gel strength as the levels of SA increased. The gel strength values were 72, 89, and 74 g/cm at SA levels of 0.1, 0.2 and 0.3% respectively. Therefore, the addition of 0.5% EWP and 0.1% SA is considered as optimum level for achieving satisfactory value of gel strength of lesser sardine surimi.

AV OR 09

**Accelerated shelf life prediction models with correlated error for biochemical and sensory responses of chill stored fish**

C.G. JOSHY<sup>1\*</sup>, N. BALAKRISHNA<sup>2</sup>, S. GREESHMA<sup>1</sup>, GEORGE NINAN<sup>1</sup>, C.N. RAVISHANKAR<sup>1</sup>

<sup>1</sup>ICAR-Central Institute of Fisheries Technology, Kochi, Kerala, India; <sup>2</sup>Department of Statistics, Kochi University of Science and Technology, Kochi, Kerala, India; \*joshycg@gmail.com

The present study considered zero and first order reaction models with equi- and auto- correlated error structures for predicting the accelerated shelf life of chill stored fish. The parameters estimated using these models were used to compute Q- the accelerated shelf life prediction quotient. The models with auto- correlated errors were fitted to two real time data obtained from the storage study of Milk fish (*Chanos chanos*) and Tilapia (*Oreochromis mossambicus*) at 0-2<sup>o</sup>C and 10-12<sup>o</sup>C and found to be more efficient in predicting the quality attributes viz: TBA, TVBN, DS, TPC and EBC. The temperature behavior on the quality responses for two species of fish was examined as a case study by combining the effect of storage time using parametric zero and first order reactions models.