



Brief report

Study the quality of silver carp (*Hypophthalmichthys molitrix*) Surimi during the ice storage.

B. Shabanpour^{1*}, M. Neirizi², Z. Noori Hashemabad³

Received: 2014.10.10

Accepted: 2015.03.16

Introduction: Surimi is one of the procedures that nowadays it is suggested to increase the consumption of fish such as silver carp (Shabanpour et al., 2008). Surimi is washed and minced fish meat myofibrillar concentration of proteins, this would wash out most of the soluble material in surimi (Sultanbawa & Li- chan, 1998). Raw fish freshness and quality of the most important factors affecting the quality surimi (Phatcharat et al., 2006). Low-temperature storage, especially storage in ice, one of the most suitable criteria for refrigeration methods and maintain the quality of fish (Benjakul et al., 2002), although changes in chemical, biological and physical on the ice completely stopped when maintenance is not are (Benjakul et al., 2003; Riebroy et al., 2007). The aim of this study was to evaluate the maximum duration of storage of silver carp in ice for surimi production with high quality and efficacy during storage on the quality of surimi made from these fish when kept in ice.

Materials and methods: Silver carp (*Hypophthalmichthys molitrix* fish at intervals of 0, 4, 8, 12 and 16 days after initial preparations into surimi process and the assessments of microbial (bacterial load and total bacterial load of cool), chemical and sensory respectively.

Chemical experiments:

Thiobarbituric acid method Siripatrawa and Noipha (2012), volatile nitrogen bases by Goulas and Kontominas (2005), protein solubility and humidity values of pressure Rawdkuen et al (2009), pH Suvanich method and colleagues (2000). White index by Kristinsson et al (2005) using a colorimeter Lovibond CAMsystem500 model model was calculated and determined.

Measuring the properties of gel production:

Preparation Gel by (Jafarpour & Gorczyca, 2008) and evaluation gel by (Lanier, 1992) were done .
Microbial testing of samples was done according to (Sallam, 2007)

Sensory analysis of samples:

To assess quality parameters include color, odor, taste and overall acceptance of samples of hedonic scale (slightly modified) was used. In order to test a panel group consisted of 10 people consisted of very good quality Grdydstvh use with a score of 7, well with a score of 5, acceptable with a score of 3, bad and very bad rating with a score of 0 is 1 (Shabanpour and et al., 1386.)

Data analysis:

The results of ANOVA using SPSS 16 software analysis and comparison of data using Duncan's multiple range test was 0/05 Sensory evaluation and analysis of non-parametric Mann-Whitney U test was used to test.

Results and Discussion: The research results showed that the solubility of proteins soluble salt (because ice crystals formed during cold storage the concentration of mineral salts in muscle cells increases), protein solubility, chemical indicators, microbial and sensory surimi (Due to raw materials oxidation (hydroperoxides) secondary unstable and prone to decomposition products such as aldehydes), White indicator, the ability to get qualitative rating factors evaluated (taste, odor, color and overall acceptability) negative trend and Percent moisture (Because denaturation of proteins myofibrils), microbial changes, changes in pH (Due to volatile

1, 2 and 3- Professor, MSc Student and PhD Student, Sea food processing, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan. Iran.

(*Corresponding author: b_shabanpour@yahoo.com)

nitrogen bases), changes in the volatile nitrogen bases (Due to microbial growth) and TBA (Because tissue damages) has increased .

Sensory and microbiological analysis results showed that the shelf life of silver carp in ice for surimi production is suitable for 8 days.

Keywords: Surimi, Silver carp, Ice storage, Quality change, Shelf life.