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RESEARCH PAPER

Shelf-life of sausage prepared from ribbon fish (*Lepturacanthus savala)* during refrigerated storage

J. MOOLA, K.C. DORA , S. CHOWDHURY AND R. MISHRA

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See end of the article for authors' affiliations

Correspondence to :

K.C. DORA
Department of Fish Processing Technology, Faculty of Fishery Sciences, West Bengal University of Animal and Fishery Sciences, KOLKATA (W.B.) INDIA

ABSTRACT

An attempt has been made to develop fish sausages from ribbon fish (*Lepturacanthus savala*) and to study the shelf-life of the product using domestic refrigerator at a storage temperature of 4°C. The minced meat was water washed by using chilled water (5°C) giving a suspension time of 15 minutes in the ratio of [mince meat: water (W/V)=1:2] to remove blood, pigment, fat and other low molecular weight components. After each wash, the meat was subjected to pressing by screw press and the moisture content of the product was maintained at about 80% level. The fish mince was made into four batches depending upon the number of washing cycles. The first batch was used directly for the preparation of sausages (T_1). Subsequent batches were washed once (T_2), twice (T_3) and thrice (T_4), respectively, then dewatered and used in sausage preparation. Then the samples were used to prepare high jelly paste product 'fish sausage' and analyzed for quality. Changes in pH, gel strength, water soluble protein, salt soluble protein, non-protein nitrogen, total volatile base nitrogen, peroxide value and free fatty acid were studied during one week of storage at 4°C. The study has established that the ribbon fish is very much suitable for the preparation of sausage. Moreover, considering the fact that this fish is reasonably priced, it makes more meaningful to utilise them for the preparation of value added products such as sausage which has a good demand among the consumers.

Key words : Ribbon fish, Fish mince, Fish sausage, Refrigerated storage.

Demand for value added products, that are semi cooked or ready to eat, is increasing globally. Moreover, value addition of minced meat has become necessary for better utilisation of low cost fish. Minced meat technology enables efficient utilisation and storage of sea food for future because of less space requirement compared to whole fish. Minced fish itself act as base material for number of fabricated sea food like fish cutlet, nuggets, cake, fish ball, macaroni, noodles, fish ham and fish sausage. Instead of meat sausage, fish sausage is gaining importance day by day in western countries as it is easy to digest and consumption of fish is good for human health because of its w-3 fatty acid content. Also, consumption of meat snack is very popular in some countries (Park *et al.*, 1993) and snack contributes an important part of many consumers in daily nutrient and calorie intake. The ribbon fish contributes a good percentage to the total marine fish production of India in general and West Bengal in particular. The annual average landings of ribbon fish in India during 2004 accounted for 131.0 T. tonnes (Srinath and Pillar, 2006). In India, technology of fish sausage was introduced by Japanese workers in 1963 and some work has been carried out on the development of acceptable fish sausage and other paste products under Indian conditions. (Prabhu *et al.*, 1988). In the present investigation, an attempt has been made to develop fish sausages from ribbon fish (*Lepturacanthus savala*) and to study the shelf-life of the product using domestic refrigerator at a storage temperature of 4°C.

MATERIALS AND METHODS

A batch of 10kg fishes in fresh condition caught along Kakdwip coast of West Bengal was brought to the processing centre. During transportation and processing, the temperature of the raw material was maintained as low as possible by using sufficient crushed ice. The fishes were thoroughly washed, dressed and the meat was picked using meat picking machine and minced in a meat mincer. The minced meat was water washed by using chilled water (5°C) giving a suspension time of 15 minutes in the ratio of [mince meat: water (W/V)=1:2] to remove blood, pigment, fat and other low molecular weight components. After each washing, the meat was gently squeezed in a muslin cloth to remove as much water as possible bringing close to 80%. Minced meat was made into four batches depending upon the number of washes made. First batch was taken directly for the preparation of sausages (T_1).