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Development of mechanically separated meat (MSM) mixture by using wastes of export tuna fish

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Mechanical separation of fish meat is generally used for gaining flesh from underutilized or waste parts mainly from fish bones of export wastes of tuna fish. The main objectives of this study were to identify fish export waste parts and to develop a mechanically separated meat mixture by using edible parts of tuna fish export wastes. Six fish MSM mixtures were prepared using 30U, 50U and 70U (Units) of MSM containing different levels of trimmings and black meat. Proximate composition and microbiological properties were examined in both raw materials and final products according to the methods described in AOAC (1995). Three fish fingers (T1, T2, T3) were prepared by three levels of MSM containing selected mixtures and compared with existing commercial fish fingers (T4). Sensory properties were checked by using 15 trained sensory panelists. The microbiological tests of *Staphylococcus aureus*, *E. coli*, total plate count, *Salmonella* were determined by the methods described in SLS 516. Tuna fish export wastes consisted of 12.95% black meat, 5.8% trimmings and 6.85% bones as major edible parts of the total weight. The proximate composition of the accepted fish MSM mixture (MSM-50U, trimmings-25U, black meat-25U) was protein (18.54%), fat (5.44%), ash (1.52%), and total solid (26.76%). The microbiological analysis indicated the absence of *Staphylococcus aureus*, *E. coli*, *Salmonella* and total plate count in checked raw materials and final products. Sensory evaluation results indicated that T2 and T4 had the same overall acceptability. Hence, the developed fish MSM mixture could replace the raw fish meat in fish by-products. Therefore, a huge income could be generated and higher profit, Rs.595/kg, could be obtained through development of the fish MSM mixture using fish export waste parts.

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