DEVELOPMENT OF FISH CAKE BY INCORPORATING SWORD FISH (*Xiphias gladius*) AND TUNA (*Thunnus albacores*) WITH SUITABLE LOCAL AVAILABLE FILLER, RICE (*Oryza sativa*), KURAKKAN POWDER (*Eleusine coracana*) & SOYA FLOUR (*Glycine max*)

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ABSTRACT

Fish is one of the excellent source which fulfill human protein requirement, as an animal protein it contains all essential amino acids, vitamins, minerals and especially essential fatty acids. Sea foods have more omega-3 fatty acid which is very use full to the humans to reduce the heart diseases. This study was focused on adding value to both fish waste from fish processing factories which is almost 50%, and the local available fillers for to the new product development.

As the main ingredients of the fish cake were Tuna (*Thunnus albacores*), Sword fish (*Xiphias gladius),* Rice (*Oryza sativa*), Kurakkan powder (*Eleusine coracana),* Soya flour *(Glycine max)* and Spices were used. The method consisted of three stages; identification of best fish species, suitable filler and chemical analysis. Identification of best fish species was done with Tuna and Sword fish, best filler from Soy flour, Red rice flour and Kurakkan powder. Fish samples were chopped ground it well and mixed with other ingredients and add in to the mould by the preference. Finally fish cake was vacuum packed, after the processing it was send to the freezers or cool rooms under -20 ^{0}C . The product was fryed at 163^{0}C to 165^{0}C within 5 to 8 minutes. The products were subjected to 40 untrained panelist and sensory evaluation 01 data were analyzed by Friedman using MINITAB

In sensory evaluation 01 showed significant influence of treatment with 'colour' and 'appearance' sensory attributes made ($p<0.05$) whereas all other sensory attributes showed $P>0.05$ which implies no significant differences between organoleptic characters. Therefore both tuna and sword fish is good to use for the production of fish cake. In the evaluation 02 Soy flour was selected as the best treatment for all organoleptic characters ($P< 0.05$). Therefore fish cake was prepared with tuna and sword fish with Soy flour to select the final recipe. Keeping quality analysis was done pH, Water holding capacity (WHC) for both samples for five weeks period and with the time both WHC and pH was reduced in both samples. Proximate analysis was done for both samples and the sample which had sword fish and soy flour was having 15.57% protein, 1.83% fat and 2.18 % ash level comparing with tuna and soy flour sample respectively 17.96%, 2.47% and 2.15%. Finally the study concluded that the tuna and sword fish was prominent in sensory qualities and it is suitable for preparing the fish cake with tuna and sword fish.