

## **A comparative study on quality characteristics of Maldivian fish prepared using Tilapia (*Oreochromis mossambicus*) and Skipjack tuna (*Katsuwonus pelamis*)**

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Changes in quality indices (freshness indices) with storage time for tilapia (*Oreochromis mossambicus*) maldivian fish and skipjack tuna (*Katsuwonus pelamis*) maldivian fish were studied using parameters: total volatile nitrogen (TVN), tri methyl amine (TMA), free fatty acid (FFA), peroxide value, total bacterial count (TBC), mould count and consumer acceptability. Studies were also conducted on cost benefits of the using tilapia for the production of maldivian fish instead of tuna varieties and the determination of best salt: fish ratio for the production of tilapia maldivian fish. Proximate composition of the two varieties of maldivian fish; *Oreochromis mossambicus* (moisture 14.92 %, protein 58.15 %, fat 7.8 %, salt 6.2 % and ash 9.89 %) and *Katsuwonus pelamis* (moisture 15.73%, protein 68.11%, fat 2.46%, salt 5.98% and ash 6.40%) showed that protein content is significantly high in maldivian fish produced from *Katsuwonus pelamis* while fat and ash contents were significantly high in products from two *Oreochromis* species.

All objective parameters used to determine the keeping quality of two maldivian fish products (*Oreochromis mossambicus* and *Katsuwonus pelamis*) showed that the quality deteriorate more faster in tuna maldivian fish than in tilapia maldivian fish. At the initial stage, TVN, TMA, Peroxide value, FFA, TBC and mold counts of tuna maldivian fish were 29.58 mg/100g, 5.4 mg/100g, 246.51 meq./kg, 52.59 %,  $6.3 \times 10^5$  cfu/g and  $1.1 \times 10^4$  cfu/g respectively while tilapia has 27.42 mg/100g of TVN, 4.11 mg/100g of TMA, 671.45 meq./kg of peroxide value, 5.89 % of FFA,  $6.74 \times 10^4$  cfu/g of TBC and  $0.7 \times 10^1$  cfu/g of mould count. After four months storage period these values change to 45.52 mg/ 100g of TVN, 18.54 mg/ 100g of TMA, 108.74 meq./Kg of peroxide value, 72.62 % of FFA,  $9.36 \times 10^3$  cfu/g of TBC and  $1.21 \times 10^3$  cfu/g of mould count. Consumer acceptability was tested through a panel of sixteen trained assessors using a nine - point hedonic scale. The results of the acceptability test indicate that tilapia maldivian fish is more preferred by panel members when they were presented in powder form while in whole piece form they preferred skip jack tuna maldivian fish to tilapia maldivian fish.

Yield recovery from Tilapia (*Oreochromis mossambicus*) maldivian fish production is about 7:1 (raw: maldivian fish) while from tuna (*Katsuwonus pelamis*) maldivian fish it is 4:1. The drying period required for the production of Tilapia maldivian fish is only about two-three days where the production of tuna maldivian fish needs about six to seven bright sunny days. However the production cost of the two products does not show a significant difference as the cost of production per 1 kg of Tilapia maldivian fish is about SLR 314.00 where for tuna maldivian fish, it is about SLR 319.00.