Development of Value Added Products from Tilapia: A Preliminary and Innovative Approach to Improve Tilapia Fishery Sector in Sri Lanka

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Tilapia is one of the popular freshwater food fish in aquaculture industry over the world including Sri Lanka. The present study focused on development of low cost, value added, nutritional fish products using Nile Tilapia: *Oreochromis niloticus*. Raw tilapia fish were purchased from Sorabora reservoir, Badulla. Fish wafer was processed using three different ratios of tapioca and corn flour (Treatment 1-1:1; Treatment 2-2:1; Treatment 35:1). Minced fish was used to prepare the fish noodles using four treatments with different flour and oil combinations (Treatment1: wheat flour 43%+coconut oil 1.5%; Treatment2: wheat flour 43%+ vegetable oil 1.5%; Treatment3: red rice flour 43%+ coconut oil 1.5%; Treatment4: red rice flour 43%+vegetable oil 1.5%). Final products in polythene packaging were analyzed for organoleptic parameters, proximate composition, keeping quality tests and color during 28 days of storage period at room temperature. Fish wafer with 1:1 of tapioca: corn flour and fish noodles with 43% of wheat flour+1.5% of vegetable oil were recorded the highest overall acceptability from consumers ($P<0.05$).Average protein levels of fish wafer and noodles were 10% and 18%, respectively. Tapioca: corn flour ratio had a significant effect on lipid content of wafer products ($P<0.05$), while lipid levels of all noodles products were not significantly different between the treatments ($p>0.05$). There was no significant difference in color a* (redness), b* (yellowness), L* (lightness) values, pH, TBARS, moisture and ash contents among treatments of wafer (pH:7.48-6.60, TBARS:0.1-1.3 mg MDA kg^{-1}, moisture:12.52-14.38%, ash:3.20-5.26%) and noodle products (pH:7.43-6.46, TBARS: 0.2-1.5 mg MDA kg^{-1}, moisture:10.16-11.83%, ash:1.63-2.15%) implying suitability for consumption during storage period ($p>0.05$). The present study showed the possibility of processing value added fish wafer and noodles using low cost Tilapia as an alternative for conventional and expensive seafood sources.

Keywords: Production technology, Consumer acceptance, Nutritional value, Value added products, Nile Tilapia

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