Development and Characterization of Low-Salted Fish Sauce from Spotted Oceanic Triggerfish (*Canthidermis maculata*) Using Selected Exogenous Plant Proteolytic Enzymes

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Fish sauce is an amber-coloured liquid condiment made from fish or fish by-products. *Canthidermis maculata* is an underutilized fish species with low dressing percentage and poor sensory attributes. This study aimed to identify the suitability of *Canthidermis maculata* for fish sauce production. Fish sauce was produced with low amount of salt and selected plant-based exogenous enzymes fermentation. Three different treatments with crude papaya fruit extract (T_1), crude pineapple fruit extract (T_2), moringa bark extract (T_3), and the control (C) with three replicates were maintained. Deskinned, eviscerated, washed and minced fish was added with 8% of salt and 15% of crude plant extracts (for the control 15% distilled water was used). The contents were air-tightly packed in sterilized glass bottles and incubated at 50 °C for 6 weeks. The produced fish sauces were evaluated for their yield, proximate composition, sensory attributes, and microbiological analysis. Results revealed that, the yield of crude papaya and crude pineapple-treated samples were significantly ($P<0.05$) higher than the other two groups. The sensory evaluation revealed that the crude pineapple extract-treated fish sauce was significantly ($P<0.05$) more preferred than other groups of sauces and the commercial product by the panelists. The microbial analysis revealed no significant ($P>0.05$) differences among the treatments and the control. The crude protein content of the pineapple extract-treated sample was 11.52±0.21which was ($P<0.05$) higher than the other three groups and it fulfilled the standards of a fish sauce. Moisture, crude protein, crude fat, ash, and NaCl contents of T_2 sample was 68.16±0.27%, 11.52±0.21%, 0.36±0.10%, 6.60±0.81%, 5.27±0.17%, respectively. Based on the findings it can be concluded that *Canthidermis maculata* can be successfully utilized with 15% pineapple crude extract for accelerated fish sauce production with high yield, sensory attributes and nutritional values as a value-added product.

Keywords: Crude plant extracts, Incubation, Proximate composition, Sensory attributes

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