

Development of a Fish Powder Incorporated Instant Noodles

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Instant noodles are consumed worldwide, but instant noodles are often unhealthy. Therefore, aim of this study was to produce a healthy instant noodle by the incorporation of fish powder as a protein, vitamin and mineral source and evaluate the effects of the physicochemical and sensory properties of the noodles. Instant noodles were produced with wheat flour incorporated with fish powder from four fish species; Indian anchovy (*Stolephorus indicus*), kelee shad (*Hilsa kelee*), milk shark (*Rhizoprionodon acutus*) and titan triggerfish (*Balistoides viridescens*) in proportions of 0, 10, 15 and 20%. Cooking qualities (optimum cooking time, cook loss, cooking yield, swelling index and water absorption index) among fish powder incorporated noodles were not significantly ($P < 0.05$) different, hence 15% fish powder incorporated formulations were selected based on cost factors and nutritional quality, for textural (hardness, adhesiveness, elastic recovery and firmness) analysis, colour analysis and for conducting the final sensory evaluation. Among the four type of 15% fish powder fortified instant noodles, titan triggerfish and milk shark fish powder incorporated instant noodles are the best-formulated noodles in this study, owing to its highest consumer preference in sensory evaluation hedonic test. The fortification of noodles with fish powder improved the protein, ash, and energy contents significantly. But the type of fish powder used does not affect the cooking or textural parameters of the end products. Milk shark fish powder (15%) incorporated into noodles has a protein content of 26.10%, while sea chicken fish powder (15%) incorporated into noodles has a protein content of 27.40%. Thus, fish powder added to instant noodles has the potential to be a technological advancement for the food sector to produce instant noodles that are nutritionally enhanced. Further it can be utilized to overcome protein and energy malnutrition among people.

Keywords: Fish powder, Fortification, Instant noodles, Sensory evaluation