

Development of a Fish Paste Incorporated with Mature Flower Buds of *Rhizophora apiculata* as a Nutritional Supplement

T.H.S.Tharaka, E.D.N.S. Abeyrathne

Department of Animal Science, Uva Wellassa University, Badulla, Sri Lanka

Indian carps (*Catla catla*) are considered as an excellent source of high proteins, vitamins and minerals and they are low in saturated fats. However, carps have limited consumer acceptability due to presence of intramuscular bones. Recent studies showed that mangroves provide priceless therapeutic agents in both modern and traditional medicines systems. Present study was conducted to develop a value added fish paste incorporating mature flower buds of *Rhizophora apiculata* which can be used as a nutritional and medicinal supplement. Fish paste was prepared mixing with boiled and minced fish with adequate amounts of other ingredients. Finally, it was pasteurized at 85°C for 15 minutes. Preliminary investigations were conducted to determine the suitable levels of all ingredients with 30 untrained panellists. According to the results, 89% (w/w) of catla, 6% (w/w) of mature flower buds of *Rhizophora apiculata*, 1% (w/w) chili, 1% (w/w) salt, 1.5% (w/w) white pepper and 1.5% (w/w) lime juice were determined as the best ($P < 0.05$). Proximate analysis showed that final product contained 72.5010.03%, 20.8211.49%, 2.8110.02%, 2.1010.11% and 1.9410.01% of moisture, protein, fat, fiber and ash, respectively. Shelf life studies of bread spread were carried out using microbiological and pH tests. In addition pH of the fish paste did not change significantly during the storage period of 30 days under refrigerated condition ($p > 0.05$). According to the microbiological observations, total coliform and *Salmonella* were absent while total plate counts were within the acceptable level for 28 days. Therefore the developed fish paste can be considered as a safe food for the consumers up to 28 days which can provide high nutritional and medicinal benefits.

Keywords: *Catla catla*, Bread spread, *Rhizophora apiculata*, Sensory evaluations, Shelf life studies