

Seafood-based papads incorporated with *Ulva fasciata* and *Sardinella gibbosa* dry fish powder

D.L.P.W. Silva and I. Wijesekara*

Department of Food Science & Technology, Faculty of Applied Sciences, University of Sri Jayewardenepura, Gangodawila, Nugegoda, Sri Lanka

Papad is a popular “ready-to-fry” traditional snack in Asian cuisine and can be consumed as a direct snack or as an appetizer. The development of seafood papad as a snack, incorporating underutilized *Ulva fasciata* and *Sardinella gibbosa* to improve the nutritional composition and the sensory properties, was the expected objective of this study. Conducting a sensory evaluation on *Ulva* powder added papads (2%, 4%, 6%, 8% & 10%, w/w), 2% and 4% *Ulva* percentages were preferred in the product development. Evaluating the sensory properties, treatments for the final formulation were discovered and the wheat flour and *Ulva* powder weight combinations at 22% and 4% respectively, the particle size of the *Ulva* powder at 355 microns and the drying method mechanical-drying at 55–60°C for 15–30 min were the optimum conditions for the fish powder (4%) added seafood papads. Then proximate and physiochemical analysis (DPPH scavenging activity (DPPH %), Total Phenol Content (TPC), water holding and oil holding activities, pH, Chromameter values, texture analysis, physical and frying qualities, fatty acid profiles, and shelf-life) were analysed. The proximate results obtained for commercial, control and selected products were 12.37±0.31, 10.97±0.44, 11.68±0.21 moisture%, 17.43±0.50, 25.56±1.34, 28.63±0.68 protein%, 19.14±2.61, 10.66±0.46, 8.23±1.14, carbohydrates%, 0.75±0.10, 6.61±0.52, 7.21±0.36 free-fat (Soxhlet extraction, solvent-Petroleum ether) %, 2.90±0.18, 12.16±0.71, 10.80±0.30 total-fat%, 6.95±0.10, 5.11±0.10, 5.82±0.08 ash% and 36.91±0.27, 34.24±1.17, 37.88±1.67 crude fiber%, respectively. A significant difference (p<0.05) was observed for protein and fiber content in developed papads. DPPH % and TPC were higher in selected papad (80% methanol extraction). The unsaturated fatty acids (Oleic acid 3.00-3.50% and others) are present only in seafood papads. No microbial presence was observed after one month of storage (too few to count). Collectively, dried powders of *Ulva fasciata* and *Sardinella gibbosa* have improved the nutritional and sensory properties of both control and selected papads.

Keywords: Papads, seafood, snack, *Sardinella gibbosa*, *Ulva fasciata*

*Corresponding Author – email: isuruw@sci.sjp.ac.lk