



FORMULATING A READY TO DRINK SOUP MIX INCORPORATED WITH SEA CUCUMBER FLOUR PREPARED BY *Bohadschia vitenesis*

Nishanthan G.^{1*}, Wickramasinghe I.², Navaratne S.B.² and Dissanayake D.C.T.¹

¹Department of Zoology, University of Sri Jayewardenepura, Gangodawila, Nugegoda, Sri Lanka

²Department of Food Science and Technology, University of Sri Jayewardenepura, Gangodawila,

Nugegoda, Sri Lanka

seenishan@gmail.com

ABSTRACT

Production of value-added products from sea cucumbers helps to increase the market value and use of excess catches effectively. Therefore, this study was carried out to produce soup mix incorporated with *Bohadschia vitenesis* which fetch very low value in the international markets. Samples were collected from major landing sites of northwest coast of Sri Lanka. Samples were brought to the laboratory of the University of Sri Jayewardenepura and sea cucumber flour was prepared after drying and grinding. Three compositions (20%, 40% and 60%) of sea cucumber flour incorporated soup mixtures were prepared. Sensory test using five-point hedonic scale was done with 30-member semi-trained panel at the University of Sri Jayewardenepura to select the best formula. The results were confirmed with 20 untrained Chinese people at Coal power plant, Norochcholai, Sri Lanka. Proximate composition of moisture, ash, fat, protein, carbohydrate and fiber percentages along with peroxide values, microbial counts and cost of production of selected soup mix were analyzed. The shelf life of soup mix packed in different packaging materials (Polyester-Aluminum-PE, Polyester-Metalized polyester PE and Nylon-LDPE) were determined in order to select the best packaging option for the selected soup mix. Changes in moisture %, peroxide value, microbial counts and organoleptic properties were measured in every two weeks interval throughout the storage period. Soup mix with 40% sea cucumber flour was selected as the best product as it covers a larger area in the web diagram. This selection was confirmed by significantly higher organoleptic scores obtained by 40% mix (Wilcoxon, Bonferroni Correction, $p < 0.016$) and 73.91% taste preference given by Chinese people. The moisture and fat contents of organoleptically best soup mix were $7.07 \pm 0.01\%$ and $3.47 \pm 0.23\%$ respectively and it was rich in protein and carbohydrate ($31.86 \pm 1.21\%$ and $46.82 \pm 0.83\%$ respectively) with 321.48 Kcal/100g calorie value. Total plate count and yeast and mold count (1.9×10^2 and 0.7×10^2 CFU/g respectively) were within safer limits (1×10^4 and 1×10^3 respectively, SLS 516). Further, coliforms and *Staphylococcus aureus* colonies were absent in soup mix. The total cost of production for 20g was Rs.75.00. Shelf life studies indicates that the soup mix can be stored in Polyester-Aluminum-PE packages maximum up to 6 weeks at room temperature without affecting the organoleptic and microbial parameters.

Keywords: value addition, sea cucumber, soup mix, bêche-de-mer