A Ready-Meal Functional Soup Mix Supplemented with Potential Antidiabetic Herbs

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The commercial demand for functional foods is increasing with shifting consumer perspectives towards the consumption of healthy meal alternatives. However, there seems to be a vacuum in the Sri Lankan food market for convenient healthy meal alternatives, especially for individuals with diabetes or with the potential risk of developing diabetes. This study was carried out to develop a nutritious and healthy instant soup mix with grain, vegetables and spice base, additionally incorporating selected functional herbs; *Osbeckia octandra* (leaves), *Cassia auriculata* (flowers) and *Passioflora foetida* (leaves), screened for their α-amylase inhibition activities and the total phenolic contents (TPC). The product formulation was carried out by changing the proportions of ingredients and their particle sizes to obtain optimum organoleptic properties. The shelf life of the ambient stored product in aluminum package was evaluated by the microbial quality and consistent sensory properties throughout a storage period of six months. α-amylase inhibition activities (IC50) and the TPC of *O. octandra*, *C. auriculata*, *P. foetida* and the plant mix (1:1:1) were 1.78±0.07, 2.01±0.38, 1.70±0.01 and 2.05±0.31 mg/mL and 2.16±0.19, 1.97±0.13, 2.04±0.03, and 2.68±0.03 GAE mg/g DW, respectively. The rank-sum test identified that the most preferred formulation was the one with all three herbs incorporated. There was no any significant ($p>0.05$) difference in preference for different particle sizes of dried herbs. The proximate composition of final soup mix was, 77.3±0.5% carbohydrates, 17.8±0.2% protein, 3.5±0.0% fat, 11.1±0.1% crude fiber, 1.4±0.4% ash and 8.4±0.3% moisture. The microbial analysis confirmed the acceptable levels of total plate counts, while the sensory evaluation showed that there was no significant ($p>0.05$) variation in organoleptic properties of the soup mix in aluminum packaging, during the six months' storage period at ambient conditions. The present study successfully conceptualized and developed a functional soup mix as an alternative healthy choice of a meal for the commercial market.

Keywords: Soup mix, Functional, Herbs, Alpha-amylase activity, Diabetes