

Development of a Composite, Novel Spice Cube, and Evaluation of Its Physicochemical and Biological Properties

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Abstract

With busy lifestyle, time management has become difficult for general public, deviating people from preparing healthy, delicious food at home. An easily usable spice cube, consisting a mixture of powdered spices, with other required condiments, is a better solution for this problem. The best recipes of the spice cubes for chicken, dhal, and fish '*ambul thiyal*' curries were selected, using sensory evaluations, considering the significantly ($P<0.05$) highly accepted sensory attributes (color, aroma, texture, and flavor). The proximate analysis results of the selected products revealed that, the moisture, crude fat, crude protein, total ash, crude fiber and carbohydrate contents of the spice cubes were $2.8\pm 0.9\%$, $9\pm 2.1\%$, $0.4\pm 0.2\%$, $11.2\pm 5.8\%$, $1.5\pm 0.6\%$, and $75.1\pm 6.4\%$, respectively. The calorific values per 100 g of the spice cubes for chicken, dhal, fish '*ambul thiyal*' curries were 385.23 kcal, 408.76 kcal, and 355.16 kcal, respectively. Of the spice cubes for chicken, dhal and fish '*ambul thiyal*' curries, the initial water activities were 0.81, 0.79, and 0.77, and the initial pH values were 5.0, 5.6, and 2.9, respectively. During three weeks of shelf life analysis, under ambient storage, the Free Fatty Acid Value of the spice cubes for chicken, dhal and fish '*ambul thiyal*' curries with half the recommended vitamin E amounts, showed significantly ($P<0.05$) lesser increment (5.38-6.87 to 5.38-7.39), than of those without (7.62-9.15 to 7.84-9.52). The microbial count of the spice cubes for chicken, dhal and fish '*ambul thiyal*' curries with half the recommended Potassium sorbate amounts, also showed significantly ($P<0.05$) lesser increment (134.67-11,446.67 CFU/g to 5,130.67-16,694 CFU/g), than of those without (163.33-11,257 CFU/g to 6,698.67-22,853 CFU/g). The spice cubes were packaged using a triple laminated aluminium foil and stored under ambient conditions. The total cost of one spice cube (50 g) for chicken, dhal and fish '*ambul thiyal*' curries were Rs. 75.38, Rs. 61.59 and Rs. 23.44, respectively.

Keywords: Chicken curry, Dhal curry, Fish '*ambul thiyal*' curry, Sensory evaluation, Spice cube

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